



Über dieses Buch

Dies ist ein digitales Exemplar eines Buches, das seit Generationen in den Regalen der Bibliotheken aufbewahrt wurde, bevor es von Google im Rahmen eines Projekts, mit dem die Bücher dieser Welt online verfügbar gemacht werden sollen, sorgfältig gescannt wurde.

Das Buch hat das Urheberrecht überdauert und kann nun öffentlich zugänglich gemacht werden. Ein öffentlich zugängliches Buch ist ein Buch, das niemals Urheberrechten unterlag oder bei dem die Schutzfrist des Urheberrechts abgelaufen ist. Ob ein Buch öffentlich zugänglich ist, kann von Land zu Land unterschiedlich sein. Öffentlich zugängliche Bücher sind unser Tor zur Vergangenheit und stellen ein geschichtliches, kulturelles und wissenschaftliches Vermögen dar, das häufig nur schwierig zu entdecken ist.

Gebrauchsspuren, Anmerkungen und andere Randbemerkungen, die im Originalband enthalten sind, finden sich auch in dieser Datei – eine Erinnerung an die lange Reise, die das Buch vom Verleger zu einer Bibliothek und weiter zu Ihnen hinter sich gebracht hat.

Nutzungsrichtlinien

Google ist stolz, mit Bibliotheken in partnerschaftlicher Zusammenarbeit öffentlich zugängliches Material zu digitalisieren und einer breiten Masse zugänglich zu machen. Öffentlich zugängliche Bücher gehören der Öffentlichkeit, und wir sind nur ihre Hüter. Nichtsdestotrotz ist diese Arbeit kostspielig. Um diese Ressource weiterhin zur Verfügung stellen zu können, haben wir Schritte unternommen, um den Missbrauch durch kommerzielle Parteien zu verhindern. Dazu gehören technische Einschränkungen für automatisierte Abfragen.

Wir bitten Sie um Einhaltung folgender Richtlinien:

- + *Nutzung der Dateien zu nichtkommerziellen Zwecken* Wir haben Google Buchsuche für Endanwender konzipiert und möchten, dass Sie diese Dateien nur für persönliche, nichtkommerzielle Zwecke verwenden.
- + *Keine automatisierten Abfragen* Senden Sie keine automatisierten Abfragen irgendwelcher Art an das Google-System. Wenn Sie Recherchen über maschinelle Übersetzung, optische Zeichenerkennung oder andere Bereiche durchführen, in denen der Zugang zu Text in großen Mengen nützlich ist, wenden Sie sich bitte an uns. Wir fördern die Nutzung des öffentlich zugänglichen Materials für diese Zwecke und können Ihnen unter Umständen helfen.
- + *Beibehaltung von Google-Markenelementen* Das "Wasserzeichen" von Google, das Sie in jeder Datei finden, ist wichtig zur Information über dieses Projekt und hilft den Anwendern weiteres Material über Google Buchsuche zu finden. Bitte entfernen Sie das Wasserzeichen nicht.
- + *Bewegen Sie sich innerhalb der Legalität* Unabhängig von Ihrem Verwendungszweck müssen Sie sich Ihrer Verantwortung bewusst sein, sicherzustellen, dass Ihre Nutzung legal ist. Gehen Sie nicht davon aus, dass ein Buch, das nach unserem Dafürhalten für Nutzer in den USA öffentlich zugänglich ist, auch für Nutzer in anderen Ländern öffentlich zugänglich ist. Ob ein Buch noch dem Urheberrecht unterliegt, ist von Land zu Land verschieden. Wir können keine Beratung leisten, ob eine bestimmte Nutzung eines bestimmten Buches gesetzlich zulässig ist. Gehen Sie nicht davon aus, dass das Erscheinen eines Buchs in Google Buchsuche bedeutet, dass es in jeder Form und überall auf der Welt verwendet werden kann. Eine Urheberrechtsverletzung kann schwerwiegende Folgen haben.

Über Google Buchsuche

Das Ziel von Google besteht darin, die weltweiten Informationen zu organisieren und allgemein nutzbar und zugänglich zu machen. Google Buchsuche hilft Lesern dabei, die Bücher dieser Welt zu entdecken, und unterstützt Autoren und Verleger dabei, neue Zielgruppen zu erreichen. Den gesamten Buchtext können Sie im Internet unter <http://books.google.com> durchsuchen.

This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

GoogleTM books

<https://books.google.com>



5
[REDACTED]

FROM THE
PUBLIC LIBRARY OF THE
CITY OF BOSTON,
DEPOSITED IN THE
BOSTON MEDICAL LIBRARY

no 776130

16-19



June & Nov 1907 & June 1909 cannot be supplied



THE SCHOOL PHYSIOLOGY JOURNAL

7761-30
16-19



• CONTENTS •

	Page
Muscular Power and Alcohol Dr. Johannes Bresler	1
Primary Lessons	
First Year—Exercise	4
Second Year—The Sense of Sight	6
Making Men	8
Grammar Lesson—Eighth Year—Respiration	10
Editorials Mary H. Hunt	11
Natural Development of the Course of Study	12
A Great Educator	13
High School Lesson—The Muscular System	14
Physiology Topics for the Year	16

PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVI. NO. 1
SEPTEMBER, 1906

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Soecial emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid to any address on request.

GINN & COMPANY Publishers

Boston

New York

Chicago

London

International Course of Study in Physiology and Hygiene

Widely used in America, and reprinted in England and sent by a committee of the British Medical Association to every local School Board in the United Kingdom with a plea for its adoption. This course of study plans for fresh topics in each grade. With its help the teacher can make Physiology and Hygiene the favorite study of the course.

Send 10 cents for an "Educator's Package" of literature containing sample copy and up-to-date leaflets.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET,

BOSTON, MASSACHUSETTS.

ARE YOU A Primary-Kindergarten Teacher?



Th t is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the ONLY HOUSE IN THE U. S. putting up Kindergarten materials especially for Primary Schools. If you will send for free catalogue now we will send you of charge instructions for using Kindergarten material in primary schools, the regular price being 25 cts. Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.

THE SUFFOLK ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

234 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

AN ATTRACTIVE OFFER

THE SCHOOL PHYSIOLOGY JOURNAL, (16th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "State Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00. Early subscribers get the September number with course of study for year. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET,

BOSTON, MASS.

100-20-112
1/2-10-11-12

School Physiology Journal

Vol. XVI

BOSTON, SEPTEMBER 1906

No. 1

"LEARN THE RICH BEAUTY OF HELPING A CHILD."

"He who helps a child helps humanity with a distinctness which no other help given to human creatures in any other stage of their human life can possibly give again. He who puts his blessed influence into a river blesses the land through which that river is to flow; but he who puts his influence into the fountain where the river comes out puts his influence everywhere. No land it may not reach. No ocean it may not make sweeter. No bark it may not bear. No wheel it may not turn.

"Sometimes we get at things best by their contraries. Learn the rich beauty of helping a child by the awfulness of hurting a child,—hurting a child even in his physical frame—hurting him still more in soul and mind. The thing that made the Divine Master indignant as he stood there in Jerusalem was that He dreamed of seeing before Him a man who had harmed some of these little ones, and He said of any such ruffian, 'It were better for him that he had never been born.'

"If it is such an awful thing to hurt a child's life, to aid a child's life is beautiful."

—Phillips Brooks.

MUSCULAR POWER AND ALCOHOL

BY DR. JOHANNES BRESLER

KRASCHNITZ.

Honorary Member of the Medico-Psychological Society of Great Britain and Ireland, Foreign Member of the Medico-Psychological Society of Paris

It is superfluous nowadays to point out and portray the injurious consequences that excessive indulgence in spirituous liquors entails upon the health, morality, and welfare of the individual as well as of the community. For no one doubts any longer the existence of a so-called alcohol peril and alcohol curse, now that from so many quarters measures for the restriction of this evil have been brought and are being brought upon the stage.

I use the expression "brought upon the stage" intentionally, for most of these measures are nothing but a scenic representation of a fight against alcohol, a kind of manoeuvre carried on with various ends in view, against the enemy that is not really regarded as such at all, but is usually, indeed, considered as our indispensable friend and companion. "Moderate use of spirituous liquors not only is not injurious, but is even beneficial,"—this is the current creed as regards alcohol.

THE CONTRIBUTION OF SCIENCE

As in regard to a belief in other fallacies not less pernicious, so in regard to the belief in alcohol, we can press forward victoriously only by means of the weapon of *science*, the weapon of exact investigation. Her war cry, her watchword, "Nothing taken for granted," has never failed to awaken the sleepers from their credu-

lous stupor and summon them to the field of battle. It is often said that the example of abstinence is the best means for combating the alcohol evil of our times—over against the millions of examples of the temperate or intemperate use of alcohol! *Scientific doctrine concerning alcohol* must become the common property of all, must convince the minds of men.

And after some decades of painstaking investigation, scholars, in particular physiologists and psychologists, have, thanks to exact methods, arrived at the positive, irrefutable conclusion that alcohol, whether taken in larger or smaller quantities, is poisonous to the body. This pronouncement has or will attain the same importance for civilization, as for example, the discovery that micro-organisms are the cause of epidemic diseases. Practically, indeed, the former is comparatively more important, for in spite of the latter discovery we are still comparatively powerless in the presence of epidemic diseases, whereas with alcoholic poisoning this is not the case.

Accordingly, it is not our purpose in what follows to hold an inquest over the victims that alcohol claims, nor to conduct the reader through penitentiaries, institutions for the insane, the epileptic, and the feeble-minded, and asylums for inebriates, nor yet to perform a de-

monstration upon the brains of drunkards. But we purpose to set forth the effects, scientifically proved of so-called moderate quantities of alcohol, to unmask its "good" (?) properties by means of measure, number and weight.

NOT A SOURCE OF STRENGTH

How is it with the strength-giving property attributed to alcohol? This question naturally proved very easy of investigation by means of the dynamometer and ergograph. It appears that immediately after alcohol is taken, there is an increase of muscular work which lasts for about half an hour to an hour. This increase, however, originates in something quite special: it is to be explained by the fact that the alcohol facilitates the liberation of the motor impulse. In the test of muscular work, the subject of the experiment has to raise a weight repeatedly to a certain height. Now it appeared that the number of times the weight was lifted was increased, but the height to which it was lifted decreased. In consequence of the greater number of liftings, the amount of work performed increased at first about 30 per cent, but toward the end of the period during which the experiment lasted, it fell off perceptibly as compared with the test made without alcohol, so that the total amount of work performed was 5 per cent less than under normal conditions.

This observation was explained by one previously made, namely, that the excitability of the motor nerves, i. e., the nerves of the muscles, is increased in the first stage of their action by moderate quantities of alcohol, whereas afterwards the excitability diminishes until it entirely disappears. Upon the muscles themselves, which are the natural source of power in our body, alcohol has no influence whatever.* It in no way feeds this natural source; it lets it flow faster, so that it is the sooner exhausted. What is said here of the muscles in general is especially true of the muscles of the heart. In this circumstance there lies still another danger in the use of alcohol, and this we must proceed to examine.

FEELING OF FICTITIOUS STRENGTH A FUNDAMENTAL PECULIARITY

The influence of alcohol upon sensations and feelings has also been the object of scientific investigation, and it has been shown that the perception of impressions in the sphere of sound, light, and of feeling, that is, touch and temperature, becomes *considerably slower* under the influence of alcohol, whereas the subjects of ex-

periment have had the impression and have asserted that the perceptions were accelerated. Even when only so much alcohol has been taken as corresponds roughly to that which is contained in a liter [about a quart] of beer these phenomena have been confirmed. This peculiarity, that alcohol deceives the person under its influence as to his ability to perceive, and hence, as to the condition of his feelings, is quite fundamental. We shall return to it later. This property grows, beginning with the smallest quantity of alcohol taken, and increasing in its effect as these increase, up to that mental state which every child recognizes and understands as drunkenness, in which the man is no longer master of his senses and his will.

Consider now the consequence of taking alcohol when it is employed to promote work, to increase muscular strength. Here, too, it robs us of our judgment as to the condition of our feelings, it entices us with the supposed alleviation when in reality the expenditure of strength in the work goes on steadily. It robs us of our power of perception as over against the normal natural feeling of weariness which shows us whether the expenditure of strength stands in proper relation to the strength in reserve, and which serves as a signal to tell us when we must break off work and rest. Alcohol in this regard has been compared to a whip; but, as is evident, the comparison is not quite correct. Alcohol is much more dangerous than a whip.

ABSTINENCE TRIUMPHANT IN TESTS OF ENDURANCE

In the management of armies this has long been understood, and emphasis has been given thereto by the abolition of brandy rations. Surgeon-General Leitenstorfer expressed himself as to the value of spirituous liquors in military practice as follows: "An army that consumes no alcohol is superior to one that makes away with as much as it pleases, in will power and endurance and moral fibre." In a Bavarian regiment the following instructive experiment was made of three companies on the march: two were given drinks during the intervals of rest, while the third was prohibited from taking such. At the end of the practice, the two companies had respectively 20 and 22 men unable to march, the third only one.

The true sportsman, too, knows that alcohol does not increase his muscular energy and endurance, but impairs them. Dr. Snell has made inquiry of 57 experienced mountain climbers as to their opinion on the subject and 37 favored refraining entirely from alcoholic liquors during mountain-climbing, 12 favored a moderate use of wine, but not beer or brandy, 3 recommended carrying spirits in limited quantities for emergencies, and only 5 regarded

*The writer's statement here must be taken only in its immediate connection. His next sentence shows that he means that it has no influence in the way of increasing the power of the muscles. Ed.

spirituous liquors, taken in moderation, as harmless. Nansen and many other explorers, whose expeditions were attended with the greatest hardships and privations, report that their achievements are in large measure due to total abstinence from alcoholic liquors.

WHY WORKING MEN ARE BECOMING ABSTAINERS

The same principle holds also for the toilsome exertions of workers in factories and at trades that make heavy demands upon the physical powers of the individual. In America and England there are, for example, ironworks where the laborers are total abstainers during their service. That the employes in a machine-shop near Berlin recently opposed an order of this character from the manager was probably owing more to displeasure at the way in which this new arrangement was introduced. For, as I observed at a recent International Congress against alcoholism, in the spring of 1901, in Vienna, the question of abstinence is followed with great interest by laboring men and in many large cities there are already associations of working men who are abstainers.

Prejudices on the alcohol question are too deeply rooted in the upper strata of society to allow one to expect that working-men would give up similar prejudices all at once in obedience to an ordinance.

Yet it is remarkable how abstinence is constantly gaining adherents from just these lower classes. It is, however, psychologically intelligible when one considers that the campaign against alcoholism, indeed even the personal renunciation of alcohol, has very distinctly the character of an emancipation movement.

THE LIBERTY OF ABSTINENCE

Every one who from sincere conviction, has entirely given up spirituous liquors and maintained this total abstinence for a considerable length of time, will corroborate the statement (for myself I can vouch for it) that abstinence from alcohol produces a certain feeling of freedom in body and soul, that, indeed, many peo-

ple then for the first time begin to have a truly happy outlook and lead a truly happy life. It is a fine thing in one's moods and determinations to feel that one is independent of the chemical substance alcohol, to which millions of men are in slavery, and at one's work to know that one is safe from the lash of alcohol, which innumerable blind and misled men lay on themselves voluntarily.

THE TEACHER ON THE PLAYGROUND

I believe in teachers getting out on the playground. In a small system the superintendent can also do so and will find it a help in many ways. Association with the children checks rudeness, and prevents bad language, quarreling, and accidents. Children grow confidential on the playground and he learns much of their work and play that he would otherwise never find out. A kindly relation is established, and the children learn to regard him as a helpful friend rather than a dictator whose business it is to check their sports, to find fault, to scold, in fact, to be only disagreeable.—SUPERINTENDENT BROWNSCOMBE in *Journal of Education*.

Teacher—"What is a synonym, Freddie?"

Freddie—"A synonym is a word to be used in place of another

word you can't spell."

SEPTEMBER

"Over the hills hangs a violet haze ;
The trees in the forest all are ablaze ;
In the open fields the sumacs burn,
And slowly to golden chestnuts turn.
The ground is strewn with gay painted leaves,
Which the passing wind in a rich carpet weaves ;
While deep in the grass the lowly brier
Glows in the light like a trail of fire.
Along the road from the wayside sod,
Spring purple asters and the golden rod.
From dull hue to splendor the woodbine grows,
And o'er the rough wall its red mantle throws."



"The bravest are ever the most humane, the most kind. If anyone would be truly brave let him learn to be gentle and tender to every one and every thing about him."



Primary Lessons

FIRST YEAR

EXERCISE

INTRODUCTION

THE importance of exercise for children in primary schools can hardly be too strongly insisted upon. A normal child is almost never still except when asleep. How unreasonable then, to expect the little ones to remain in one position in school for more than a few minutes at a time! This is especially true of the child just entering school for the first time.

With this in mind, the teacher should plan her work in such a way that, after each period of constrained position, there shall be exercises at the board, or work where the child can freely move in his seat and stand occasionally. After such change he feels rested and is ready for another short period of attention. While the children are taking active exercise the room can be aired. Of course, one has to be careful about drafts, but even in the severest weather, a little careful planning will show ways of obtaining fresh air. Nothing makes a class dull and listless more quickly than lack of pure air.

The teacher should insist upon proper habits of standing, sitting and breathing. Once these habits are formed, it means the avoidance of countless ills and annoyances in later life. The teacher should be sure to see that each child sits in a seat that fits him. A desk too low, or a chair too high, is not only uncomfortable but injurious. Such evils should be remedied at once.

The child's pride in sitting and standing correctly can be aroused and the rest is easy.

Moreover, this is an excellent opportunity to cultivate grace and ease of movement. Exercises should be planned with this end definitely in view. Awkward positions and uncouth gestures ought to be remedied, but without arousing the child's self-consciousness.

For definite physical exercise a few moments at the end of each hour will be sufficient. Out-

of-door work, whenever practicable, is by far the best, but five minutes of running, jumping, and active movements on the part of the children with windows open do a great deal of good. That the children may know the importance of exercise and the best conditions under which to take it, let the lesson be somewhat as follows.

VALUE OF EXERCISE

Show the picture (p. 5) of the horses drawing a load of hay.

Let the children talk about what they see in the picture, leading their thoughts to the horses and the heavy load they have to draw.

Name some other things horses can do. Could you draw a load of hay? Why can a horse draw one when you can not? Develop the idea of the strength of the horse.

Show the picture of the colt and its mother. What does the colt do?

What will he do as he grows older? Can he draw heavy loads at first? Bring out the fact that it is by running and playing, drawing a little at first, and more and more each day that at last he will become strong enough to draw heavy loads.

Name some other animal that is strong. Could an ox that had never worked draw as heavy loads as one that was used to drawing them?

Boys and girls need to grow tall, straight and strong. Shall they try to lift heavy objects and do as hard work as father and mother do? Lead the children to see that they must begin with little things, and do them each day. Then as they grow older they will be stronger and able to do harder things.

ILLUSTRATION

One day George fell on the ice and broke his arm. The doctor bandaged it tightly, and George carried it in a sling for three weeks. He could not use it at all during that time. When the doctor took off the bandage, the arm was weak and flabby.

George could not use it to throw a ball, roll a hoop, or climb a tree for a long time. But every day he used the arm a little more, and by and by it grew strong again like the other.

What must we do to make our arms strong? our legs? Name the kinds of play that are good for one. We can not play all day. What else can we do? What kind of work will make us strong? What work can boys do at home? What can girls do in the house? Speak of the real pleasure in work or play when the arms and legs are strong.

Let us name two ways of getting strong.

Play and exercise help to make us strong.

GYMNASTICS OR ALL ROUND EXERCISE

Show that the horse does not use one or two of his limbs and let the others remain idle. He uses all of his muscles.

When boys and girls read or study, they use only a few of their muscles. Those not used will grow weak if they do not have some exercise. If a man has to sit still all day, using only his arms, the joints of his legs get stiff and the muscles flabby. He needs exercise for his legs. Sometimes we have gymnastic exercises. These are to strengthen the parts of the body that otherwise do not get exercise enough. If you would have all the parts of the body grow strong you must give them all a chance to exercise.

The horse and colt use all their muscles.

Boys and girls must use all their muscles.

SUGGESTIONS FOR SIMPLE GYMNAS- TICS—BREATHING EXERCISES

These exercises are given as suggestions. The teacher probably can not use more than one or two at a time.

Class stand.

Hands on hips.

Breathe in slowly, through nostrils.

Breathe out slowly, through nostrils.

Breathe in,—hold breath while teacher counts five.

Breathe out, forcibly.

Breathe in,—hold breath while counting five.

Breathe out, forcibly, through lips puckered as for whistling.

Breathe in, raising arms to shoulder height.

Breathe out, while arms sink.

Breathe in, arms raise and heels raise.

Breathe out, arms and heels sink.

Breathe in, raising arms in front above head.

Breathe out, lowering arms at side.

Repeat each order several times counting one, two; one, two.



"When the meadows are sweet with the scent of the hay,
And the tinkle of cow-bells is heard far away."

EXERCISES FOR THE FOOT

Position.

Hands on hips.

Weight on right foot.

Left foot forward, toe touching ground, in step straight.

Foot replace.

Repeat with right foot.

Repeat, moving foot out at side, right, left.

ARM EXERCISES

Arms bend, elbows close to body, finger tips touching shoulder.

Right arm upward stretch. Bend.

Repeat with left arm.

Repeat, stretching each arm forward and sideways.

Repeat, using both arms at once.

LEG EXERCISES

Hands on hips.

Weight on right foot.

Raise left leg and bend knee.

Stretch leg straight out, toe pointing down.

Knee bend. Foot down.

Repeat with right leg.

EXERCISE FOR
THE NECK

Hands on hips
—head turned as far to left as

possible. Forward.

Head turned to right. Forward.

Head bent backward. Up.

To left. Up.

To right. Up.

Forward. Up.

EXERCISES FOR TRUNK

Hands on hips.

Twist slowly to left as far as possible. Forward.

Twist to right. Forward.

Bend to left. Up.

Bend forward. Up.

Bend to right. Up.

Repeat all exercises to count of one, two, one, two.

HOW WE FIND OUT THINGS

SECOND YEAR

EDUCATION is of value only as it translates itself into action. The trained man must do more than learn to see and hear, and to use his other senses effectively; he must know how to act on the moment and with good judgment from the impressions received.

In the schoolroom it is often easier to repeat directions than to insist upon attention and prompt obedience, but it is ease purchased at the expense of the child's best good. He grows more and more careless until the habit of inattention is fixed. When he gets out into the business world he finds there is no place for those who can not measure up to an emergency. They are shoved aside and must fall to the rear.

There are two great armies in the world, the workers and the idlers, and our pupils must soon join the ranks of one or the other. If we are carving a statue, the work can be done tomorrow as well as today, but the fashioning of character can not wait. It goes on in spite of us. If we would modify it we must act at once.

A practical education depends first of all upon sense training. We must teach the child the right use of his senses, we must help him to train them to ever better work, and we must show the vital connection between knowing what ought to be done and doing it.

SIGHT

At the beginning of the year when the children are fresh from their summer playtime the teacher may very easily make the transition from play to work by taking up the subject of the special senses.

Ask them about the things they have seen and heard in the fields and woods, the sweet odors that have been wafted on every summer breeze, the delicious summer fruits, and touch upon the varied pleasures they have enjoyed through these avenues of sense.

Speak also of the irreparable loss of those who, being blind or deaf, are denied many of these enjoyments, and remind them that their attitude toward such unfortunate persons should be kindness itself.

(1)

THE BRAIN HELPERS

Do you remember the name of the part of your body that is inside your head? What does the brain do for us? Bring out the ideas that with the brain we think and by it we learn what is going on about us.

How does the brain know these things? Your brain has several helpers, three in pairs

and two single ones. Each pair work together. Who can name them? (Write on board, Sight, Hearing, Smell, Taste, Touch.) We call these helpers the five senses.

(2)

OBSERVATION PLAY

Before giving this lesson, it would be well for the teacher to note carefully the birds, flowers, trees and other natural objects which may be seen by pupils on their way to school. She may also, if desirable, hang or place several small objects about the room that have not been present hitherto.

Tell the children you are going to find out how much they have really seen. Ask who can name the most objects such as birds and squirrels, seen on the way to school. Let several give lists and others add to them. Ask other children to give lists of trees, shrubs, and flowers or fruits. Question them as to the colors, size and shapes of some of the things they saw.

In rural schools or others where time is limited, this exercise may take the place of part of the morning exercises, or it may be so conducted as to furnish an interesting language lesson; and here, as elsewhere, when living creatures are spoken of, the teacher may drop a timely word concerning kindness to all animals.

Turning from the out-door world to the school room she may test them as follows:

Close your eyes and raise your hand if you have seen something in the room to day that was not here yesterday. (Call on different children to name what they have noticed.)

You may close your eyes, and raise your hand if you can answer my questions.

What color is the door knob? How many panes of glass in each window? What color is my desk? Which children in the room have black hair? Which children have dark eyes? Which children have light eyes? What can you see when you are on the playground?

It is not advisable to ask the children to keep their eyes closed too long at a time.

Vary the experiments by calling a child to the front of the room and asking him to describe a person or an object so well that the others can tell what he has described.

Which one of the brain helpers did you use to find out all these things of which we have been talking?

(3)

THE EYE

What have you already learned about your eyes? Review briefly the facts learned in the first year.

The teacher may write on the board the parts of the eye as they are developed in the course of the lesson.

Place your fingers just above your eyes. What do you feel under the skin? Place them at the sides of the eye. What do you feel?

If you should fall on your face, why would you not be likely to hurt your eye? Why does not your eye stand out as far as your nose?

Each eye is set in a hollow place called a *socket*.

Now you understand why the eyes are placed as they are.

They are protected by the bones.

Think how many times baby falls when he is learning to walk and what a good thing it is that the bones protect the eyes.

Do you remember of what use the *eyebrows* are?

What do we call the curtains over the eyes? When you think something will hit your eyes what do you do. Of what use are the *eyelids*?

What do you call the hairs on the upper and lower eyelids? They help keep out the dust that might blow into your eyes and make them uncomfortable. Tell the children how the bird closes its eyelids.

(4)

PARTS OF THE EYEBALL

What shape is the whole eye? We call it the *eyeball*.

Let the children stand facing each other and notice what is in the middle of their eyes.

This black spot is the hole through which the light gets in, and makes a picture of what you are looking at.

What color is it in every eye? What do we call it?

You can see a color around the *pupil*. Is it the same color in everyone's eyes?

What are some of its colors? We call it the *iris*.

The iris is a little curtain. When the light is too bright, the iris is drawn close around the pupil something as you draw up a bag with a string.

In the cat's eye this curtain is drawn closely in the daytime and is opened wide at night. Why?

Have a picture of a cat's eye on the board showing the difference by day and night unless you are sure the class understand what you mean.

When we are in the light, the pupil of the eye is small. When we are in the dark, the iris is drawn back, making the pupil larger, that we may get more light. The curtain moves slowly

as it is not good for the eyes to go suddenly from darkness to bright light.

(5)

CARE OF THE EYES

After we have used the eyes for awhile they become tired. What shall we do then? Bring out the fact that plenty of sleep will keep the eyes strong.

Why should we not try to read when it is growing dark

or by a dim light? We should not read lying down unless the head is much higher than the body. On which side should the light fall when you work or write? Why on the left? A left-handed person should have the light fall on the right side? Why? How many of you sleep with a light in the room? A dark room is more restful.

We need to keep the eyes clean. We should never touch them with soiled hands. We should wash the lids carefully. Each person should have his own towel.

Many railroads do not allow their men to use drinks that contain alcohol. Some do not allow their men to use cigarettes. Why?

Impress the children with the thought that if by neglect or carelessness the eyes are once injured the eyesight may be permanently impaired.



Photo by Dorothy M. Chase. Courtesy of Woman's Home Companion.

"Eighteen lives at stake."

AUTHORITATIVE QUOTATIONS

Scientific investigation has established the fact that even a moderate use of alcoholic beverages impairs the acuteness of sight and hearing, including the power of distinguishing colors.—*Deutsche Monatsschrift*.

In people who are addicted to the use of alcohol or tobacco, or both, we sometimes have a gradual failing of vision, constituting what we term tobacco amblyopia.—Frank Van Fleet, M. D., Surgeon, Manhattan Eye and Ear Hospital.

It may be said that tobacco affects the eyes in two distinct ways. (1) Dense smoke will cause a catarrhal conjunctivitis in those persons who suffer from irritable eyes, especially if the eyes are exposed to it in the foul atmosphere of a badly ventilated room. (2) Nicotine slowly and continuously absorbed from the alimentary canal is liable to produce tobacco amblyopia.—H. Willoughby Lyle, M. D., Lecturer in Physiology in King's College, London.

T. N. Kelynack, M. D., reports the views of modern English authors who recognize in alcoholism a powerful predisposing influence for tuberculosis. According to F. Oliver, alcohol is particularly destructive to young people who are disposed to tuberculosis. According to Dickenson, tuberculosis is three times as frequent among drinkers as among abstinent people.—Quoted from *Lancet* by *Internationale Monatsschrift* (1904).

In 1897, Carroll D. Wright, of the United States Department of Labor asked about seven thousand men at the head of great industrial establishments whether they made any requirements as to total abstinence, and if so, what? All but 233 replied; and more than half of them did make some requirement in regard to total abstinence, while 1,284 required total abstinence whether on or off duty.—*Union Signal*.

German writers, in commenting on the failure of German athletes to carry off signal honors in the Olympian Games at Athens, assert emphatically that the chief cause of the low standard of their physical achievements is the beer-drinking habit, which is greatly sapping the national vigor. Several writers agree that this habit prevents the Germans from acquiring that tautness and steel-like springiness of muscles which distinguishes the American and English athletes, and not only causes superfluous fat, but seriously effects the heart, which is the sport organ par excellence.—From a recent special dispatch from Berlin, Germany, to the *New York Sun*.

MAKING MEN

A lad at school, divided between love of sport and love of books, says the *Ladies' Home Journal*, was introduced to the President not long ago. The lad who had prepared himself for a ceremonious interview, was immediately put at ease by the President's hearty greeting and question, "What game do you like best?"

"Baseball, Mr. President," was the prompt reply.

"Ah," said the President, "Now I could never play baseball. I have to wear glasses you see. I don't think I should be afraid of anything except a baseball coming at me in the dark."

The lad's sympathy was plainly intense. "What a pity," he said, "What an awful pity, Mr. President."

The President smiled, and then hastening to show that there was some amelioration for the loss said:

"But if it comes to riding or shooting or playing tennis, I can hold my own I think; and do you know jiu-jitsu?"

The lad did know something of the art, and then and there, he and the President gave certain demonstrations of its fineness, the lad forgetting everything except that he had met a man who understood the heart of a boy because he had at heart the manliness of a boy.

A few months later, a valuable launch belonging to the Government was in danger because of the befouling of the anchor. There were no professional divers about, and no one seemed willing to undertake the task of disentangling it. This lad volunteered, and came up successful, albeit with a bruise or two.

To his mother's horrified question as to why he did it, he replied: "What did I learn to dive for? The President made me feel, when I saw him, that sports were intended to make men."

The *Journal* says further that the President is above all constructive, and physical exercise is one of the methods of construction. He believes that life must be led normally, sanely and simply; that physical exercise is the finest stimulant in the world and leads to no reaction. Hence he regards physical training as a method in the best conduct of life.

It is not only the boy he is thinking of but the man—the man who will be able to "pull his weight" in the boat that flies the pennant of the Republic only on condition that he cultivates his best self, mentally and physically.

It was of the "making of men," of bringing the youth of our country to the highest point of efficiency, physically, morally, socially, and

economically, that our law-makers were thinking when they enacted the statutes making obligatory the study of physiology, hygiene, and temperance in the common schools of every state and territory. It was a policy so far-reaching and beneficent that some of the most enlightened countries of the world have made haste to provide a similar education for their school children, lest in the race of nations they should gradually be distanced.

America presents the greatest opportunities for high achievement ever offered to man, but even as her gifts are splendid, so the number who enter the lists is large; hence to be great or even moderately successful requires sound health and a vitality which makes great application and endurance possible.

GOLDEN-ROD

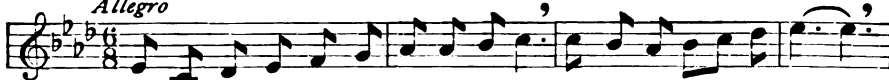
I know a field, a sunny field,
But not in sunny France;
And there is neither glint of shield
Nor gleam of pennoned lance;
Nor does the wind toss knightly plumes,
Nor silken tents unfold,
And yet in autumn it becomes
The Field of the Cloth of Gold.

For when the haze of summer days
Has melted from the skits,
And we, without reproof, may gaze
Up into heaven's eyes,
A host their plumes and banners shake
In joust with breezes bold,

THE SWING¹

ROBERT LOUIS STEVENSON

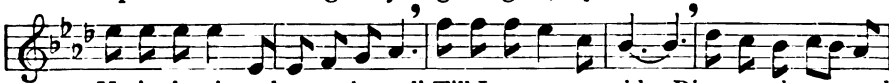
M. WHITE

Allegro

1. How do you like to go up in a swing, Up in the air so blue?
2. Till I look down on the garden so green, Down on the roof so brown—



Oh! I do think it the pleas-ant-est thing, Ev-er a child can do.
Up in the air I go fly-ing a - gain, Up in the air and down.



Up in the air and o-ver the wall, Till I can see so wide, Rivers and trees and



cat-tle and all, O-ver the coun-try side, O-ver the country side.

Thus the end and aim of thorough instruction in temperance physiology has not been merely the teaching of certain tenets, as some have supposed, but rather to give to the children of rich and poor alike the knowledge that will hasten the day when "America will produce the finest race of human beings the world has ever seen," a race equipped physically, mentally, and spiritually to do the work which we believe is the destiny of the nation in the progress of humanity.

NO SPELLING REFORM FOR HIM

Uncle Jerry Peebles was looking over the list of "amended spellings" recommended by the reformers. "Good land!" he exclaimed, "I don't see nothin' strange in them words. That's the way I've allus spelled 'em."—*Chicago Tribune*.

And golden-rod's bright champions make
The Field of the Cloth of Gold.

The butterflies with blazoned wings
Are heralds for the fight,
And many a lovely lady flings
Her token to her knight.
And so, amid their gorgeous suite,
With pomp and wealth untold,
Summer and autumn royally meet
On the Field of the Cloth of Gold.
—*Martha Hartford, in The St. Nicholas.*

Little Gertrude was familiar with the old-fashioned silhouettes on the walls in her grandmother's house. One day, as she was looking out the window, she began to dance in high glee, and exclaimed: "Oh, Gamma, come quick, come quick. At last I've seen a silhouette go by."

¹ From A Child's "Garden of Verses," published by Chas. Scribner's Sons.
Music from "First Music Reader," published by Ginn & Co.



RESPIRATION

THE teacher of the eighth grade should bear in mind that to at least one-quarter of her pupils the school will this year say its last word, and accordingly her work should be done with particular thoroughness, especial attention being paid to hygiene, and the nature and effects of alcohol and other narcotics.

Pupils in this and the preceding grade have arrived at the psychological moment when they can and ought to be encouraged to compare the likenesses, differences and needs of plant and animal economy.

OXYGEN, LIFE'S NECESSITY

Since in physiology and hygiene as in other studies, the matter is developed progressively, new facts added each year, the work of the eighth year continues the elementary work of the seventh and thus may begin with a review of the uses of the blood, and the impurities it absorbs, and then logically proceed to a study of the respiratory system by which the blood is refurnished with oxygen.

In taking up this subject, the teacher may discuss the fact that every living cell, whether plant or animal, absolutely requires oxygen to carry on its processes. Beginning with the simplest forms of animal life, discuss and compare successively the amoeba and earth-worm, surrounded by air and needing no internal organs to furnish them oxygen; the newt having a rudimentary form of respiratory system; the creatures like frogs in which the respiratory system is developed according to their needs; and then the larger animals and man, which, having many deep-seated and inaccessible cells, must be provided with a complicated system of tubes and air cells capable of offering to the air a very large surface.

RESPIRATION, NATURE'S WAY OF MEETING THE NEED

What are the component gases of common air? Develop the point that the object of the

whole respiratory process is to furnish oxygen to the active cells of the body and remove the carbon dioxide.

ORGANS OF RESPIRATION

Beginning with the nose, consider in their order, the structure of the different organs of respiration and the adaptation of each to its special function.

Unless it is inadvisable for some special reason, the teacher can obtain illustrative material by securing the lungs and windpipe of a sheep or even of a fowl, washing and drying them for class use.

In connection with the study of the larynx, show that it is desirable and possible for everyone to cultivate a pleasing voice.

Call attention to the difference in color between the lungs of a healthy child and of an old person; of a farmer and of a coal miner.

PROCESS OF RESPIRATION

Although the matter of breathing seems so simple it is probably true that most pupils will require careful teaching if they are to understand it clearly. If a small pair of hand bellows is available it will prove most helpful.

Since the process of expiration is more easily comprehended, begin by showing how the action of the chest muscles and diaphragm squeeze the air out of the lungs much as the hand squeezes water from a wet sponge. Which are the muscles so used and how are they controlled? Why cannot we hold the breath long?

Illustrate inspiration by slowly raising one handle of the bellows, an action which will correspond to the lowering of the diaphragm and the raising of the chest walls. Note how the air rushes in just as it does into the expanded chest. Explain simply that since the atmosphere about the earth is 40 miles deep it exerts a pressure of 15 pounds per square inch. When the chest, which is an air-tight box, is suddenly made larger by the expansion of its walls, the air is pressed in till the cavity is filled and the air is the same density inside as outside.

How much air can the lungs hold? Can they be entirely emptied of air? What is meant by tidal, residual, complemental, and supplemental air? Ask for a diagram showing the proportion of each to the "vital capacity." What explanation of the fact that men average a much larger lung capacity than women although there is no difference between boys and girls in this respect until past the age of fourteen? Point out that the boy whose lung capacity is greatest will have the best chance to excel in sports because his "wind" will be the best. Suggest exercises that will tend to increase lung capacity.

(Continued on page 16.)

School Physiology Journal

COPYRIGHT APPLIED FOR

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over..... .40 each

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, ACTING EDITOR

EDITH M. WILLS, Assistant Editor

Published monthly at 23 Trull St., Boston, Mass.

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

LOVE'S ALCHEMY

Lord give the mothers of the world
More love to do their part;
That love which reaches not alone
The children made by birth their own,
But every childish heart.
Wake in their souls true motherhood,
Which aims at universal good.

Lord give the teachers of the world
More love, and let them see
How baser metals in their store
May be transformed to precious ore
By love's strange alchemy.
And let them daily seek to find
The childish HEART beneath the mind.

ELLA WHEELER WILCOX.

THE CONDITIONS FOR EFFECTIVE HYGIENIC AND TEMPERANCE TEACHING

MARY H. HUNT

The removal of the cause of a great evil is more than reform, it is prevention of the evil itself. The cause of alcoholism and its horrors is a popular misapprehension as to the nature and effects of alcoholic drinks and other narcotics. The people for generations have thought that alcoholic drinks moderately taken are safe beverages, while, in point of fact, alcohol has the power to create an uncontrollable appetite for more that indulged may become destructive and, as Professor von Gruber says, "No one can foretell whether or not he is susceptible to alcohol. He finds out only by playing a game of chance with his own life which is a dangerous experiment."

Universal education as to these facts and the physiological reasons for obeying those which teach total abstinence from alcoholic drinks and narcotics is the only preventive of this great evil. The object of such education is to influence the formation of right physical habits. As these are early formed, new ones each year, this education must be given through some

institution that reaches all the children in the nation. The schools are manifestly the medium for conveying such instruction which must begin in the earliest years where it can reach the child's life, and continue, new facts added each year, as the child can comprehend them, to keep the subject fresh, until it is covered at the close of the first year of the high school.

HOW TO INTRODUCE SCIENTIFIC TEMPERANCE IN SCHOOLS

You ask how it can be introduced into the schools and how taught. I reply, just as you would introduce and teach any other new subject. For instance, if it were the study of arithmetic that was to be introduced into the schools for the first time, its importance would be urged upon the school board who would be asked to make a place in the curriculum for enough lessons to cover the subject beginning with the simplest facts in number for the first primary year, and to adopt a course of study which would show what should be taught each year, the subject being developed progressively with text-books in arithmetic for the help of pupils as soon as they were able to use books, usually about the fourth school year, with books also progressively adapted to the capacity of the pupils as the study proceeds through the grades.

Now this is what should be done in the case of physiology. The school board should adopt a course of study such as the International Course, which shows what is to be taught in temperance physiology each year. This plans for teaching the subject orally in the three primary years with an oral lesson book for the guidance of the teacher containing the simply told facts that the little ones can understand. A primer, a simple book for the use of the pupils in this subject, should be furnished for children in the fourth year, a book a little more advanced for the fifth and sixth years, one still more advanced for the seventh and eighth years, and a high school book.

With such books and the course of study teachers will know what to teach and should understand clearly how to teach it. They will be especially well equipped for good teaching if, in addition to the books and course of study, they have the SCHOOL PHYSIOLOGY JOURNAL, each number of which contains lessons with suggested methods of teaching, together with recent data culled from the world's great scientists concerning the nature and effects of alcohol and other narcotics with which to buttress their teaching.

Three lessons a week for ten weeks of each of the three primary years, and four lessons a week for ten weeks of each of the succeeding years, with reviews, will cover the subject of

physiology, hygiene, and narcotics if the above plan is followed.

To recapitulate: Just three things are necessary: first, the adoption of the right course of study; second, the adoption of good books adapted to grade; third, the interested teacher.

Teachers are interested just in proportion as they become fully acquainted with the truth upon this subject and realize the responsibility placed upon them in training their pupils to habits of sober living. The JOURNAL aims to meet this need, and each teacher, therefore, should be supplied with it throughout the school year.

What ought to be done can be done by whoever has the courage and the faith to undertake it, for Omnipotence is pledged to such an one.

The question "How shall we secure effective hygienic and temperance instruction?" is constantly recurring, but it was asked with such special frequency last winter that it called out this message which proved to be the last bit of dictation given by Mrs. Hunt and that only a few days before her death. As it is the expression of the principles evolved in Mrs. Hunt's extended experience and thorough observations through nearly thirty years of arduous labor for this instruction, it is with peculiar satisfaction that we bring it to our readers' attention at the beginning of this school year.

NATURAL DEVELOPMENT OF THE COURSE OF STUDY

While the names of the different divisions of physiology and hygiene occur more than once in the course of study* from the primary grades to the High School, the treatment of those subjects in the different grades should vary widely, according to the successive stages of the pupil's mental growth.

Thus, in the primary years, the standpoint from which the lessons are developed should be that of observation, corresponding to the period of rapidly developing perceptive faculties.

In the lower grammar grades, while the child's interest in activity of all kinds is at its keenest, the earliest simple instruction as to the functions of the physical organs and the corresponding hygiene is the natural development of the subject.

The age of the advanced grammar grade is that of the unfolding reasoning faculties, and here, accordingly, the physiological standpoint is the adaptation of structure to functions, the inter-relations, as of nerves and muscles, the

broader social relations of the community as well as personal hygiene, and the bearing of mental and moral training upon subsequent efficiency. A special reason for enriching the course at this time lies in the fact that for a large proportion of the pupils (United States statistics show that only one in twenty enters the high school), the opportunity of the school for foundation-laying in thoughtful and intelligent citizenship is rapidly shortening.

In the high school, pursuit of physiology and hygiene should give training in research, in experimental demonstration and other forms of scientific investigation as a preparation for the future of the scientist, the scholar, or the influential citizen who appreciates the value of positive proof.

Thus, while the general subjects of physiology and hygiene extend through the four stages of school life, there is the widest possible variety in the facts discussed and the methods of treatment.

SUPPOSITION

Prof. Agassiz once interrupted a student who was hesitatingly saying: "I don't know about that, but I should suppose—," with the injunction, "Stop! Don't suppose anything; examine and find out."

The "suppose" type of thought is characteristic of the thinker who does not take time or pains to inform himself, or of him who reasons blindly without full knowledge of facts. Such persons, so far from being negative factors, by their very lack of information and clearness of vision, are often positive hindrances to progress.

There is, perhaps, no subject concerning which people cling more closely to old-time opinions than the use and effects of alcoholic drinks. There is a constant tendency to "suppose" that these opinions represent the facts, and consequently either to show indifference to the whole matter, or to condemn later views as extreme. Even concerning the plans for school instruction on this subject, there are misconceptions to which some persons cling as tenaciously as if their lives depended upon it. Is this really sensible? Will any serious man when he stops to think, admit that his opinions are impervious to new ideas? We believe not.

The honest, progressive intellect is always open to information and when confronted with new facts or even opinions on this subject will not lightly dismiss them as of no value because not wholly in accord with his present conceptions, but will say to himself, "Stop, don't suppose anything; examine and find out."

*See page 17.

A GREAT EDUCATOR

An interesting and potent personality in education has withdrawn from official connection with the public school system of the United States in the retirement of Dr. William T. Harris from the office of National Commissioner of Education.

Born and educated in New England, Dr. Harris, having spent some two years at Yale University, went to St. Louis where he had a long and fruitful experience as superintendent of the St. Louis schools, giving that city the distinction of being the first in America to adopt primary nature study and the kindergarten. At the same time, he was carrying on the study of speculative philosophy with the scholarly persistence which slowly but surely makes the concepts of great thinkers one's own; as Dr. Harris himself has expressed it, "each insight seemed to be an independent discovery on my own part and what I could vouch for on my own responsibility."

Dr. Harris was the founder of the *Journal of Speculative Philosophy*, and in the interval of a few years which separated his nearly quarter of a century service in St. Louis and the National Commissionership, he was an active member of the Concord School of Philosophy.

The speculative philosopher is not always well endowed with practicality. The latter was notably lacking in some of the well-known teachers of philosophy. The happy union of the two characteristics in Dr. Harris is perhaps the secret of his wide influence in educational affairs in our own country and the deep respect with which he is regarded abroad. The same habit of close thought that year by year interpreted to him Kant, Hegel, and other philosophers has enabled him to view new phases of education on all sides, to reach thus definite, well-balanced conclusions, to state them with admirable clarity and force, and to put them into practical action on the principle that "theory and

practice, philosophy and action, are most closely related, can never be safely separated."

Thus in the rise of nature study, while recognizing its importance, Dr. Harris' philosophical habit of mind helped guide the current of thought in what threatened to be too radical a change from classics and history to the sciences.

In the study of science itself, he is not of those who think that the sole or chief object of public school nature study is the acquiring of knowledge by personal investigation and observation. He perceives that in this as with all subjects of study, the individual must learn to recognize and profit by the sum total of the knowledge painfully learned and expressed by others; in a word, that the pupil must learn that he is but one unit in "the social whole of humanity," and that he will learn this not alone by personal observation of nature itself, but from books embodying the results of observations by others.

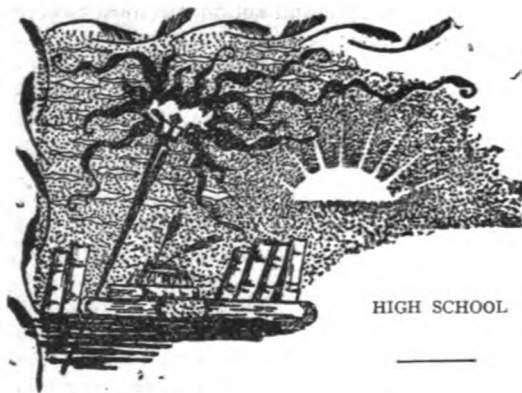
Needless to say, Dr. Harris believes in American schools. He believes in their possibilities in training up wholesome, intelligent men and women, in producing good citizens, for, after all, schools and school systems, and methods are but means to an end—the production of the finest type of humanity individually and socially.

For several years, Dr. Harris has honored the work for public school hygienic and temperance instruction as a member of the Advisory Board, and more than once has expressed his appreciation of the humanity of its purpose, and, despite its difficulties, its high importance as a "permanent and active means for the dissemination of correct views regarding the effect of intoxicating drinks. It must be total abstinence that is taught," he has said in one of his annual reports, "and not a compromise which admits moderate drinking as the ideal to be reached."



Copyrighted by Underwood and Underwood.

"Come to me, O ye children! And whisper in my ear
What the birds and the winds are singing in your sunny atmosphere."



THE MUSCULAR SYSTEM

IN taking up the study of the muscular system, the teacher may arouse interest by a discussion of the great Olympic Games, both ancient and modern. Let the student who is also specially interested in ancient history read or relate in class a brief account of the ancient games, the one of artistic temperament bring pictures of statues illustrating athletic poses, and the youth whose hobby is athletics will be only too pleased, if asked, to bring a sketch of the modern Olympic Games held four times during the last ten years.

The class cannot help but grow enthusiastic upon learning that in each of these great contests the Americans won the greatest number of points, in the last games (spring of 1906) winning 75 5-6 points, thus leading their nearest competitors, Great Britain and her colonies (41 points) by 34 5-6 points, and each of the other nations by a much larger score.

These picked Americans took part in most of the many events, contesting against picked men from other nations, and won by a wide margin. What do victories in such straight tests of physical ability mean? Not only strength, but endurance, precision, and a splendid co-ordination of muscular and nervous energy.

What are the essentials of such physical fitness and why did our countrymen outrank the athletes of all other nations? The answering of these questions leads naturally to the careful study of:

1. Muscles and tendons, their uses, classification, properties, attachment and structure.
2. The mechanics of motion.
3. Exercise and the advantages of fine muscular development.
4. Hygiene of the muscular system including the effects of alcohol and other narcotics.

MUSCLES, ORGANS OF MOTION

What are the general uses of muscles? Which ones are used in holding the body

erect? in running? in throwing the discus? A comparison of the text-book pictures showing the location, size and names of the principal muscles and tendons of the body with easily obtainable illustrations of statues, and athletes in action, will be an interesting method of fixing these main points in mind. Why is the sartorius muscle so called? Ask some one to relate the story responsible for naming the large heel tendon, the tendon of Achilles.

Require drawings in note books and on the board of some of the most important muscles. These should show attachments and state uses.

Take up some simple experiments such as treating a piece of involuntary muscle with dilute acid to separate the cells and observing them under a high power microscope, boiling a piece of lean meat and separating the minute muscular fibres for examination, and others found in nearly all up-to-date high school text-books. Encourage members of the class to make original investigations upon material to be found in any home.

THE MECHANICS OF MOTION

Explain how the use of the bone levers in the body changes the slow, short, inadequate movements of the muscles into long, swift ones thus adding greatly to the range and rate of motion. Which class of levers is illustrated when the head is moved back and forth? when the fore arm is flexed? when the body is raised upon the toes? Explain how the synovial sacs or bursae reduce friction at some joints such as ball bearings in machinery do. Locate one or more muscles where the action is similar to that of pulleys.

Compare the muscular system of the body in point of output of power and comparatively small waste of energy with a good engine. It is said that the body excels every machine in these respects.

Explain how the will causes the brain to send a nerve impulse which sets the muscle engine in motion much as the engineer by pressing a button sends the electric current which starts his machinery.

Why do the edges of a fresh wound gape?

EXERCISE AND FINE MUSCULAR DEVELOPMENT

"The average man weighs about 150 pounds of which 60 pounds is muscle. We cannot neglect 40% of the body with impunity, hence 'He who does not find time for exercise must find time for sickness.'" Nature expects every person to do his duty by himself, but if he neglects that duty, she invariably exacts the penalty.

Discuss such epoch makers as Roosevelt, born a weakling, but acquiring and keeping a splendid physique by systematic and well regu-

lated exercise; Gladstone and Li Hung Chang retaining marvelous mental and physical energy till long past the allotted three-score and ten, and others who will come readily to mind, all performing prodigies of labor because the muscular system was kept in the highest state of efficiency. Bring out the point that all such training is the means, not the end, a means which helps the individual to reach his noblest and best development, and thus be of the most service to his fellows.

How can exercise benefit the skin, muscles, bones, brain, lungs, heart, digestion and even the moral tone of the person? What forms of exercise would be most beneficial in developing weak lungs, in improving digestion?

How does exercise increase the circulation? Why will a brisk walk often increase both the quantity and quality of the output of brainwork? Why will exercise reduce superfluous fat and on the other hand increase the fatty tissue of a lean person? How can healthy exercise, and athletics properly conducted, do much to preserve discipline and promote morality in colleges and academies? Why does a game of base ball on Saturday afternoon actually rest a tired plough boy? Why is exercise taken from a sense of duty less beneficial than that which is enjoyable? Why do athletes sometimes succumb to heart disease or consumption? What danger from brisk exercise after a hearty meal?

Emphasize the need of exercise adapted to the special needs of the individual and the necessity of developing all parts of the body equally.

HYGIENE OF THE MUSCLES

What kinds of food are best suited to the person doing muscular work? Why do growing children crave sweets? Why is fresh air more imperative during brisk exercise? What is fatigue and what is the result of continuing to over-fatigue a muscle for some time? Explain how nature makes it impossible for a healthy person really to become "tired to death."

Why does the use of drugs like alcohol seem to remove fatigue? What real danger in their use for that purpose? What is the effect of alcohol on muscular power?

Warn the class against using certain powders and drinks sold at the drug stores which are advertised to remove fatigue, many of which contain dangerous heart depressants, or narcotics like coca.

Why will work like piano playing, which calls for a multitude of rapid but light muscular movements, often tire a person more than a less number of much heavier ones? Why are the movements of a child much more graceful than those of many adults? Why is the youth who is growing very fast apt to be awkward?

What particular muscular facility is

needed by the watchmaker or compositor? What do such trades as blacksmithing and stonemasonry call for? What needs have explorers, mountain climbers, and soldiers on a campaign? Develop the idea of the relation of training and practice to facility and precision.

Ask some members of the class to give the course of training which must be followed by



"Gleaming trees with scarlet lined,
Barren rocks with garlands twined;
Purple, topaz, brown and red,
Are with matchless grace o'er spread."

*Courtesy of Boston & Maine R. R.

athletes such as crack oarsmen, ball players, and if possible, secure the course followed by our athletes previous to the Olympian Games. Why are alcohol and tobacco generally omitted entirely, if, as some have claimed, tobacco is harmless and alcohol gives strength? What reason do German doctors assign in explanation of the poor showing made by their countrymen at those great games? Why do most of the great railroad companies of America, as well as an increasing number of corporations, require abstinent employees? Many of the great life insurance companies give considerably lower rates to abstainers than to even moderate drinkers. Are they acting from purely philanthropic motives or as a matter of good business?

Referring to Dr. Bresler's article (page 1) on the effect of alcohol on the muscles, and to the quotations, drive home the conclusions that alcoholic drinks decrease muscular precision, strength, endurance, and output of work, and for these reasons seriously impair the business prospects of every one who indulges, even moderately, in their use. Hence the use of such substances will be voluntarily avoided by the young man or woman who desires perfect control of mind and body in the varied relations of life, and the fullest development of the "higher man."

RESPIRATION*

(Continued from page 10)

How does the air get into the blood? By means of drawings in red and blue crayons, or better still by a little ball wound all about by yarns of red and blue, illustrate how the tiny capillaries carrying venous and arterial blood form a thin film of blood which covers the entire surface of the sacs, and thus, furnishing an area of over 1500 square feet, bring together large surfaces of blood and air. Explain that gases and liquids can pass through living tissues and so the blood is enabled to exchange its carbon dioxide for oxygen. Illustrate this process by some simple experiment like the following:

Remove the shell from the large end of a fresh egg leaving the delicate membrane exposed. Immerse the egg, large end up, in a glass of water and in a few hours sufficient quantity will have passed through the membrane to cause it to bulge perceptibly. The water soaks through the thin membrane as the gases do through the air sacs of the lungs.

Discuss proper breathing and point out that it is neither chest nor abdominal exclusively, but a rhythmic movement of the whole thorax.

The need of deep breathing is shown by a recent writer who says that purifying the air in the lungs is like dipping dirty water out of a barrel and replacing it with that which is clear. If a dipperful of clean water is poured into the barrel and the same amount immediately dipped out, the cleanest water will be at the top, whence it will always be dipped out and the dirtiest water left. In the lungs, likewise, the purest air is at the top and removed by ordinary breathing while the fouler air at the bottom of the lungs can only be removed by long, deep inspirations.

RESPIRATION—ITS FRIENDS AND ENEMIES

Show how the most powerful ally of healthy respiration is pure air in homes, school houses and public buildings. Lead the class in a full discussion of the best means of ventilating each. Emphasize the fact that perfect ventilation would enable us to avoid most air-borne diseases.

Speak of the dangers of inhaling dust which frequently contains the microbes of tuberculosis and other diseases; of the necessity of keeping homes and public buildings free from dust; of hygienic methods of sweeping and dusting; explain why rugs are much better than carpeted floors; the reason why heavy hangings are undesirable; the importance of clean, well-watered streets.

Explain how easily the germs of tuberculosis grow and multiply in persons whose lungs have been starved for pure air, who neglect severe colds, and those whose bodies are poisoned by alcohol and tobacco. Warn the children against using towels, handkerchiefs or drinking cups of others, especially of those who may have colds, sore throat, grippe, or pneumonia, or against coming in close contact with such persons.

Emphasize the damage which the acrid smoke of tobacco, especially when inhaled, does to the delicate air cells, and explain how alcohol by reducing the oxygen carrying power of the blood, and by so thickening the membranes of the lungs that the oxygen and carbon dioxide can not readily filter through them, poisons the blood and makes drinkers especially susceptible to lung diseases. Show also that the use of alcoholic drinks further induces such diseases because the user often unduly exposes himself, or, by spending much of his earnings for drink not infrequently deprives himself and his family of proper food, clothing and shelter.

"There is a vision in the heart of each
Of justice, mercy, wisdom, tenderness
To wrong and pain, and knowledge of its cure."

September, 1906

SUGGESTED TOPICS FOR THE YEAR IN PHYSIOLOGY AND HYGIENE†

June, 1907

	GRADE I*	GRADE II*	GRADE III*	GRADE IV	GRADE V	GRADE VI	GRADE VII	GRADE VIII	HIGH SCHOOL?
Sept.	Needs of children. Play, exercise, rest.	How we find out things. Sight and hearing.	Needs of body; cleanliness, care of skin and clothing.	Body as whole. Comparison of animal and human framework.	Food: sources, choice, value, preparation, service. Dangers of impure foods.	Body heat; sources, regulation. Effects of food, clothing, exercise, alcohol.	Plant structure, respiration, oxidation, digestion.	Respiration, voice. Lung capacity, how increased. Effect of alcohol and cigarettes.	Muscular system.
Oct.	Parts of body. Need of correct positions of body.	Taste, touch, smell. Effects of cigarettes and alcohol.	Needs of body. Ventilation. Care of lungs. Fresh air in bedrooms.	Bones: shapes, adaptation, composition. Joints. Effects of tight clothing.	Teeth. Two sets, structure, use, care. Taste: use and misuse.	Skin; body garment; structure and care. Perspiration. Hair, nails.	Plant and human physiology compared. Cells, tissues, organs, health of cells.	Pure air for home, school, public buildings. How avoid lung diseases.	Assimilative system.
Nov.	Development of body. Food, fresh air, sunshine, exercise.	Parts of body. How we live and move, work or play.	Things that harm body. Beer and cider. Changes by fermentation.	Food and drinks. Proper choice. Self-control in eating and drinking.	Stomach: changes in food there and in intestines.	Kidneys: shape, location, blood supply; importance, care; effect of alcohol.	Brain, controlling organ, sympathetic system. Habits, dangers of narcotics.	Body protection. Use and abuse of clothing. Hygienic homes.	Circulatory system.
Dec.	Clothing. How the body is protected.	Exercise and rest. "Early to bed and early to rise."	Needs of body. Good food. Rules for eating. Table manners.	Digestion. Teeth and stomach, use and care of.	Absorption. Villi, lacteals, liver. Alcohol injures assimilative glands and organs.	Sight and hearing. Structure of organs. Senses how preserved, how injured.	Foods, how applied to body economy. Adulterations. Injurious drinks.	Formation of waste materials. Organs that excrete waste.	Respiratory system.
Jan.	Cleanliness. Care of hair, teeth, nails, skin. Bathing.	Cleanliness. Frequent bathing, clean clothing, individual cups, etc.	Teeth and stomach. How food is fitted for the blood.	Circulation. Heart, blood-vessels. Blood carries food and air.	Tobacco and cigarettes.	Smell, taste, touch. Physiology and hygiene of each.	Assimilation of food. Study of physiologic processes.	Hygiene of liver and kidneys. Effects of too much meat, alcoholic drinks.	Excretory system.
Feb.	Body as a whole. Trunk, limbs, head.	Need of food. What, when, and how to eat.	Blood the food carrier. Heart, arteries, veins.	Respiration. Air the purifier. Lungs, deep breathing, ventilation, cigarettes.	Fermentation, a process of decay. Opium and other narcotic poisons.	Brain, receiver and director of messages. Structure. Concentration. Sleep.	Hygiene of digestion. Food, amount, preparation, mastication. Domestic economy.	Skin: construction, uses, care. Baths: cleansing and tonic.	Patriotic lesson. Race degeneration. How caused and prevented.
Mar.	Rest and sleep. Needed by animals, children, every body.	Grapes and grains. Good and bad uses.	Bones: framework of body; use and care. Correct position.	Muscles. Exercise and rest. How to be strong.	Blood: serum, corpuscles; builds and repairs; purity, how obtained.	Effects of alcohol and tobacco on nervous system.	Beverages. Necessity of water. Nourishing drinks. Intoxicants.	Sense perceptions. Delicacy and accuracy impaired by narcotics.	Nervous system.
Apr.	Foods: what kinds. When to eat. Need of thorough mastication.	The teeth: kinds, uses, and care. Injury by cigarettes.	Muscles. How we work and play. Alcohol, tobacco, lessen strength.	Brain, nerves. Direct movement. Thought. Alcohol, tobacco impair capacity.	Heart: chambers, valves. How strengthened; how impaired by narcotics.	Framework. Bones and joints, how constructed; how cared for.	How foods are carried to tissues. Circulatory processes. Narcotics dangerous.	Muscles: structure, work, hygiene; alcohol decreases working ability.	Hygiene of person and home.
May	Drinks: wholesome and unwholesome.	Beauty of face. Sweet voice: how obtained.	Brain and nerves. General control of body; care. Alcohol and tobacco.	Senses: avenues of mind. Skin: use and care.	Lungs: delicate structure, work, device to permit breathing. Ventilation.	Muscles, cords, tendons. Exercise. Alcohol tends to lessen precision.	How foods are stored in the body. Absorption of fat, albumen, sugar.	Human and animal framework compared. Physiology and hygiene of latter.	Hygiene of environment: town, state, nation.
Review.	Review.	Review.	Review.	Review.	Review.	Review.	Review.	Review.	Review.

NEW CENTURY SERIES

of Anatomy, Physiology and Hygiene

The latest series of physiologies published since the recent agitation regarding the systematic study of physiology and hygiene, including scientific temperance instruction, in our public schools. It represents the latest phases of scientific research and study, combined with the best methods of instruction. The books have been arranged in accordance with modern experimental methods and particular attention has been given to the treatment of alcohol and other narcotics and to the subject of right living.

Anatomy, Physiology and Hygiene For High Schools. By Henry F. Hewes, M. D., Instructor in Physiological and Clinical Chemistry, Harvard University Medical School.
Price, \$1.00

With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

Elementary Anatomy, Physiology and Hygiene For Higher Grammar Grades. By Winfield S. Hall Ph.D., M.D., Professor of Physiology, Northwestern University Medical School,
Price, 75 cents

Treated according to the inductive method, beginning with the easily observed facts of plant physiology and leading by comparison up to human physiology and hygiene. Simple illustrations and experiments, but no dissections, are presented in connection with the physiological facts. A particular feature of the book is the lessons on domestic economy which form a noteworthy contribution to one of the most important problems of sociology.

Intermediate Physiology and Hygiene For Fifth and Sixth Year Pupils, or corresponding classes in ungraded schools. By Winfield S. Hall, Ph.D., M. D., and Jeannette Winter Hall, Special Teacher of Physiology, Berwyn, Ill.
Price, 40 cents

The illustrations are a marked feature of this book, including both mechanical diagrams and attractive pictures designed to interest the pupil. Special attention is called to the simple comparisons of the bodies of human beings and of the lower animals. The object of this comparative study is to impress upon the mind of the pupil the unity of nature and to cultivate in him a love and sympathy for the lower animals.

New Century Primer of Hygiene First Book for Pupils' Use. By Jeannette Winter Hall.
Price, 30 cents

A simple and attractive presentation of the elementary facts of physiology for pupils of the fourth year grade. The language used is free from technical terms and readily comprehended by the child, while familiar facts are used to emphasize the principles discussed. Brief object lessons in general physiology are given, together with a simple treatment of the most important laws of hygiene. Contains numerous illustrations and useful and practical suggestions.

Oral Lesson Book in Hygiene For Primary Teachers. By Henrietta Amelia Mirick, A. B., Assistant Editor School Physiology Journal.
Price, \$1.00

A manual for the teacher, containing suggestive oral lessons on the most elementary facts of anatomy, physiology, and hygiene, for the first three years of school life. At the end of each lesson are brief memory points summarizing the most important features. Each day's work is thoroughly planned and made simple and interesting.

AMERICAN BOOK COMPANY, *Publishers*

New York

Cincinnati

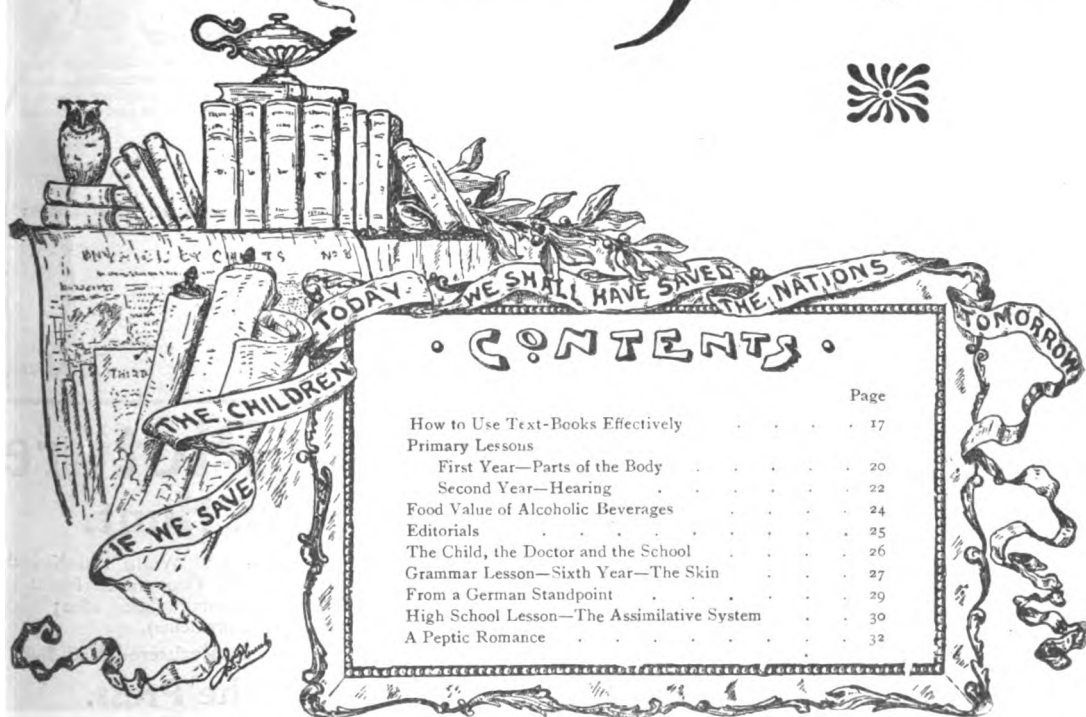
Chicago

Boston

Atlanta

San Francisco

THE SCHOOL PHYSIOLOGY JOURNAL



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVI. NO. 2
OCTOBER, 1908

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Soecial emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. [Revised Edition]

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid to any address on request.

GINN & COMPANY Publishers

Boston

New York

Chicago

London

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.
\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

New Picture of Mrs. Hunt.

Large sepia-portrait of the late World and National Superintendent of Scientific Temperance Instruction, suitable for framing (size 18x23 inside measurements).

Sent postpaid \$1.00. By Registered Mail, \$1.08

Just off the Press.

Fine half-tone engraving (facsimile of large photograph) reproduced in soft gray tints, suitable for framing.

Sent postpaid \$.25, Registered \$.33

New series of

5 S. T. I. Souvenir Post Cards

Including portrait of Mrs. Hunt, Headquarters at 23 Trull Street, Mrs. Hunt in Study, Museum and Composite (3-view) card.

Price, \$.03 each; 2 for \$.05
Series \$.10

School Physiology Journal
23 Trull Street, Boston, Mass.

School Physiology Journal

Vol. XVI

BOSTON, OCTOBER 1906

No. 2

A PARABLE

BY JULIA WARD HOWE

"I sent a child of mine today ;
I hope you used him well."
Now, Lord, no visitor of yours
Has waited at my bell.

"The children of the millionaire
Run up and down our street.
I glory in their well-combed hair,
Their dress and trim complete.

"But yours would in a chariot come
With thoroughbreds so gay,
And little merry maids and men
To cheer him on his way."

"Stood, then, no child before your door?"
The Lord, persistent, said.
"Only a ragged beggar-boy,
With rough and frowzy head.

"The dirt was crusted on his skin,
His muddy feet were bare ;
The cook gave victuals from within ;
I cursed his coming there."

What sorrow, silvered with a smile,
Glides o'er the face divine ?
What tenderest whisper thrills rebuke ?
"The beggar-boy was mine !"

Used by permission.

HOW TO USE TEXT-BOOKS EFFECTIVELY

BY DR. W. T. HARRIS

IN the American school, to a greater extent perhaps than in the schools of other countries, the recitation is the important means of teaching the pupil how to study the book and get information and insight for himself.

WHAT THE RECITATION SHOULD ACCOMPLISH

Our greatest danger lies in the tendency to permit the mechanical habit of memorizing the text-book, instead of requiring the pupil to master its thoughts. Each recitation ought to develop in the pupil a greater power of self-help. There must be individual work on the part of the pupil,—the work of preparation of the lesson ; then there must be the examination on the results of his study, conducted by the teacher. The examination is conducted in the presence of a class ; it does not take each pupil, one by one, by himself. The chief point in the recitation is to ascertain the degree of understanding which the pupil has attained, and correct and enlarge it so that he shall come to the study of the next lesson with more care and attention. Each pupil learns most from his fellow pupils.

The good teacher knows how to manipulate his class as a whole. He knows how to bring every part of it to the support of every other part ; how to help each individual by means of the insights of his fellows.

He thereby gains time to consider each subject thoroughly.

THE VALUE OF THE TEXT-BOOK TO THE PUPIL

The immature mind of the pupil does not know how to study the printed page,—it reads the words, but thinks under the words only its small mouthfuls of meaning, seeing only a very little of the precise import, and missing the generalizations altogether. The object of the study of the book,—the chief object of the modern school,—is to learn how to get out of the printed book the wisdom that is expressed there. The race ought to reinforce the individual. The pupil comes to his task with a small stock of words and a few narrow ideas. Yet he must, by means of the little that he has, unlock the great world of thought that is spread out before him in books.

THE TWO OBJECTS OF THE RECITATION

The first object of the recitation is to draw out each pupil's own view of the subject matter of the lesson. Accordingly, as one after another recites, our teacher probes beneath the mere first statements for the more comprehensive phase which should lie in the pupil's mind if he understands what he is reciting. By a few searching questions the pupil is brought up

against some phase of his lesson that his thoughts had not reached. Now begins the real work of the recitation; this pupil shall now supplement or perfect his own views by those of others. The teacher rapidly calls out from a dozen other members of the class all eager to add their statements, just what is needed to correct the one-sided character of the recitation of the first pupil. It will always happen in getting at this result, that several new views not even in the mind of the teacher at the moment are elicited, all tending to clear up and amplify the exposition.

By drawing out from the different members of the class these statements and corrections, the teacher is accomplishing far more for them than his own statements or corrections could do. Not what he does directly, but what he gets his pupils to do, is of value. There are two aspects of this which deserve special note:—

1. The statement of an idea in a pupil's own words is apt to be better fitted to the capacity of comprehension which his fellows possess, and therefore to arouse more vivid ideas in their minds. The necessary crudeness and narrowness of such ideas get corrected by the variation of statement which is obtained from the different members of the class. Each pupil sees several phases that entirely escaped him in the course of his own investigation, and even the particular view that he himself seized is made clearer by the discussion.

2. The pupil is aroused and stimulated to a new method of study on the next lesson. He has obtained a peep through the lenses of other minds, and can not fail to remember these different points of view in preparing a new lesson. It is, moreover, a practical collision of one intellect with another, and acumen is sharpened and habits of the closest attention are engendered.

The pupil in the recitation is to be taught how to study the book properly. He is to be shown what his fellow-pupils have got out of the words of the lesson. Each fellow pupil is an immature individual like himself. But partial views differ one from another, and only agree by luck and chance; only whole views agree with each other. The ideas of his fellow-pupils are different from his own,—not contradicting his own but supplementing them. The good teacher takes pains to develop, one after another, these partial views, and complete them into whole views. All come to agreement when the whole is before them. Disagreement exists as long as the views are partial. The pupil must paraphrase any words and sentences that he quotes from the book lest he shall hide his ignorance behind the mere words. . . . Again, paraphrasing increases command of language.

INDIVIDUAL OBSERVATION NOT THE CHIEF SOURCE OF KNOWLEDGE

Many educational reformers fall into the error of supposing that the business of a school is not, primarily, for the purpose of training the pupil to learn from books; they would teach the pupil to observe nature directly. It is surprising to discover, upon careful examination, how little one can get from his own unaided observation of nature, even under the most favorable circumstances. Humboldt learned to know nature wonderfully, but he arrived at this knowledge mostly through reading the results of observations made by others. . . . If Humboldt made more original discoveries than anyone else in his time, even in his case his original observation constituted only one part in one hundred of his knowledge. The individual apart from the social whole is a weak, puny affair. The social whole of humanity is something very powerful. The individual reinforced by the whole is elevated to a potency far above his simple, natural self; he becomes a spiritual self through sharing in the labors of his race.

THE CRUCIAL POINT IN EDUCATION

We must never lose sight of this relation of the individual to the social whole if we are to judge rightly in affairs of education. That which gives the pupil only special skill, and no power to participate in the labors of others, is not of the highest value.

The educator who has looked widely over the field does not need to be told that just here lies the most important point in pedagogy. The initiation of the youth into the great secret of combination with his fellow-men—where can it be done as well as in the school? The school should help each struggling boy or girl to ascend above his idiosyncrasy and achieve the universal form of activity which will make the free man or free woman. . . .

KNOWLEDGE OF FACTS FOLLOWED BY VERIFICATION

There goes on necessarily with the learning to understand the lesson a process of verification on the part of the pupil. The assimilation of the new thoughts is principally this. In case it is the report of facts in nature, the pupil must verify them by comparison with what he has previously learned, and with what others know about the matter. Only in a narrow field of study can he verify the facts by going over all the original observations. In natural philosophy and chemistry this is very important. He should see everything verified by actual experiment there. In botany and in geology this is not possible to nearly so great an extent; in physical geography and meteorology and zoology to a much less extent.

DISADVANTAGES OF PURELY ORAL INSTRUCTION

While the good oral teacher secures many of these advantages, he is not able to secure all. The pupils come before him to receive information on the day's lesson, and not to be critically tested on what they have done, and on the methods which they have used. It is true that they can be tested on the previous lesson, but it would be better to have them responsible, also, for a definite amount of labor on the lesson of today. Meanwhile, if the oral instructor is comparatively no better than a majority of teachers in schools as they are, it is evident that the pupils will not be powerfully aroused to self-activity of any sort except play. Yet even memorizing the words of the book is self-activity, although of a low order. It is certainly a higher activity than the process of repeating statements after the dictation of the teacher.

But the good teacher will strive by all means to develop in his pupil the most rapid growth of mental independence. He will teach him how to pursue his investigations on any topic by sifting to the very bottom the statements made in the book. Under the good teacher the pupil will learn to compare one assertion with another, and one man's view with another; to verify his ideas by consulting different authorities, and to gain a comprehensive insight by exhausting the sources of information on a given subject. Original investigation should not so much precede as follow a mastery of what has already been accomplished.

The possibilities of a class recitation are very great for efficient instruction in the hands of a teacher who understands his business. From beginning to end, the class recitation is a vigorous training in critical alertness. The pupil afterwards commences the preparation of his next lesson from the book with what I have called new "apperceptive" powers, for he finds himself noticing and comprehending many statements and a still greater number of implications of meaning in his lesson, meanings that before had not been seen. He has in a sense gained the points of view of fellow-pupils and teacher, in addition to his own.—From an Address before the American Institute of Instruction. *Journal of Education*.

*Permission of Rand, McNally Co.

"Be noble ! and the nobleness that lives
In other men sleeping, but never dead,
Will rise in majesty to meet thine own."

"POOR RICHARD" AGAIN

"In a Philadelphia kindergarten school a teacher was telling the little children all she knew about o'clock. "Now, this," she said, "is the pendulum—this thing that swings back and forth. Did any of you ever hear the word 'pendulum' before?"

A child put up her hand. "Yes, teacher," she said. "Pendulum Franklin, I've heard it often."

A proposition to throw aside books as instruments of teaching and discipline would involve cutting the child off in great degree from the past. It would involve the renunciation of the major part of civilization and would be a long step towards barbarism. The books must be retained—to this all agree.—B. A. HINSDALE.



"Where the pools are bright and deep"

*A BOY'S SONG

"Where the pools are bright and deep,
Where the gray trout lies asleep,
Up the river and o'er the lea,
That's the way for Billy and me.

"Where the hazel bank is steepest,
Where the shadow falls the deepest,
Where the clustering nuts fall free,
That's the way for Billy and me."



Primary Lessons

FIRST YEAR

PARTS OF THE BODY—FACE

CHARACTER writes upon the face with indelible lines. It is an undoubted advantage to have regular features and a beautiful complexion, but these things can only be controlled to a limited extent. The beauty that comes from within can be attained by all.

If the children start by learning to be generous, unselfish, and thoughtful for others, if every day this ideal is definitely before their minds, when they grow up, they will have not only beautiful characters, but beautiful faces as well.

Since the answers given by the children are likely to vary greatly, the development of the following lesson is suggestive, not arbitrary.

SHAPE OF THE FACE

Make with your hands the shape of a face. (Draw an oval on the board.) What do we call this shape?

Can you think of anything else that is oval in shape? (Put a few lines in the oval on the black-board to indicate the roundness, and some child will see that it is like an egg.) Name something else that is oval in shape (lemon, plum, etc.)

THE FEATURES

What must we put on this picture to make it look like a face?

First, *two eyes*. Where are the eyes? (Put them in the picture and add the other features as they are suggested by the class.)

What are our eyes for? Name some things we could not know except for the eyes. Impress upon the class the fact that we must be very careful of them—not to hurt or get anything in them.

What helps to keep dust and dirt out of our eyes? *Lids* and *lashes*. What else are the lids for? Show that they are the curtains that drop down to keep out the light when we sleep.

What keeps the perspiration that runs down our foreheads from getting into our eyes? What shape are our *eyebrows*?

What next shall we put in the picture? What is the *nose* for? Lead the children to tell that it is with the nose that we breathe and smell. What do we use to keep the nose clean? Leave with the children the thought that each person should have his own handkerchief and use no other.

What comes next? What is the *mouth* for? What is in the mouth? What do we do with the tongue? Give simple rules for the care of the teeth.

What shall we put on the sides of our oval? What are *ears* for?

What is the top of the face between the eyes and the hair called? The sides, between the nose and ears? The part below the mouth?

Let one child point to all the parts of the face named, other members of the class giving the names, as: *eyes, eyelids, eyelashes, eyebrows, nose, mouth, ear, forehead, cheek, chin*.

CARE OF FACE

How many girls have a doll? What do you do when her face gets dusty? Why do you wash it? Why not leave the dust on it? How do you wash it? How does the kitten wash its face? Which do you like better to see, a child with a clean face or one with a soiled, grimy face? Why? When should we wash the face? Bring out the idea that face and hands should be washed on rising, before coming to school, before eating, after being out of doors at play.

Teach best ways of washing the face. If desirable one of the children may illustrate with a doll under the teacher's direction. Emphasize the use of a clean sponge or cloth, clean water, soap, and careful washing around eyes, mouth and ears.

Inculcate an ambition in the children to be attractive by cleanliness and help them to understand that this much they can do for themselves.

EXPRESSION

We can do more for our faces than just to keep them clean. They show what we feel. How do you look when you are sorry, angry, happy? These feelings are apt to leave their marks upon the face. If we are angry and fretful no one will like to see our faces. If we are happy and kind our faces will be pleasant to look at, and every one will be glad to see us.

See that the children have these points clearly in mind: the shape of the face; the features, their use and care; and the idea that kind thought and deeds make sweet faces. The story of "The Ugly One" will help to emphasize the last point. It should be told in a bright, vivacious manner and may be correlated with the language work if desired.

THE TWO SISTERS

Once on a time there lived two sisters, one very kind, and good and the other selfish and disagreeable. Everyone liked to look at the first sister because her goodness showed in her face and made her beautiful, but the other was not pleasant to look at because her bad temper showed in her face and made it ugly.

The Ugly One wanted more than anything else to have a beautiful face. One day she met a fairy who said to her, "Would you like to be beautiful?"

"Oh, yes!" said the Ugly One. "I would rather have a beautiful face than anything else in the world. Tell me what to do, and no matter how hard it is I will do it."

"Go home and do not speak a cross word for a whole year."

The Ugly One went home and for a year spoke only pleasant words. People began to say, "How the Ugly One has changed. She looks more like her beautiful sister."

At the end of the time, the fairy met her again and said, "How has the year gone?" The one who was called Ugly answered, "Not one cross word have I spoken. Now give me a beautiful face." "Not yet," said the fairy. "Go home again and for the next year never think a cross thought."

The Ugly One went home sadly. How hard it was! But she tried and tried, thinking always, "It is for the sake of having a beautiful face."

Once more at the end of the year the fairy stood beside her and said, "How has the year gone?"

"I have tried hard to think only good thoughts all this time. May I not have the beautiful face now?"

The fairy smiled, but said, "Not yet. For one year more you must try. This time you must speak pleasant words, think kind thoughts, and do it not for the sake of having a beautiful face, but for the sake of being good."

This was hardest of all, but the Ugly One did her best. She soon found that all the people loved her. They said, "How pleasant the Ugly One is. How much she has grown like her beautiful sister."

When the end of this year came the fairy met the Ugly One once again. She took her by the hand and led her to a pool of water, smooth as a mirror. "Look!" she said.

The Ugly One saw her own face in the pool, beautiful as the light. It was the beauty from within that shone out through the face.

"Are you satisfied?" asked the fairy, and the child seeing herself ugly no longer, but with a beauty lovelier than that of mere face, the beauty of the soul, said, "Yes, for now I know how to keep happy and beautiful."



"The fairy led her to a pool of water smooth as a mirror."

If I covet any higher
grace,
It is this—upon my
face,
Just to show an inner
light
To illumine other's
night.

Give me such a look—
so high
That the saddest pass-
er-by,
On a sudden glad, shall
say,
"Somewhere shines the
sun today!"
—*The Searchlight.*

One day a little boy came to school with very dirty hands, and the teacher said to him:

"Jamie, I wish you would not come to school with your hands soiled that way. What would you say if I came to school with soiled hands?"

"I wouldn't say anything," was the prompt reply, "I'd be too polite."

"I wonder what part of an animal a chop is. Is it a leg?"

"Of course not," answered Sadie, "it is the jaw-bone. Haven't you ever heard of animals licking their chops?"

SECOND YEAR

HEARING

ALL children should have their hearing tested upon entering school and occasionally afterwards, especially upon recovering from any disease.

If any defect be found they should be given every advantage in seating, and a physician consulted as to the treatment necessary. Apparent dullness is often due entirely to inability to hear, and we owe it to ourselves, to our pupils, and to the community to make every effort to remove its cause.

THE EAR

Have certain children close their eyes while you make different sounds. These may be sweet, disagreeable, soft, loud, harsh, musical. Ask the children to tell what sounds you made.

Call on other children to make sounds for the class to name. Make very soft sounds in order to train the sense of hearing to be acute. Have them play the following game:

Child stands at front of room blindfolded. Different children say "Good morning." One who is blindfolded tells who spoke. This may be made the opportunity for teaching the children to say "good morning" pleasantly.

What part of your body told you what these sounds were? Show pictures of animals.

How do the ears of horses differ from yours? Those of deer? Of cats? Of dogs? Of elephants? Of rabbits? Why? Why do wild animals need to hear very quickly? Point out in the simplest language the ways in which the ears of these creatures are adapted to their particular needs. Show that our ears (outer) as well as those of the animals mentioned, are so shaped as to catch as much sound as possible.

Call their attention to the opening leading from the outer ear. By question and explanation lead up to the statement that besides the outer ear we have an inner one through which the sound travels to the brain. Illustrate this statement by simple drawing on the blackboard showing the curves and narrowness of the ear passage with its little hairs and wax-covered walls. Help the children to see how these provisions guard against dust and insects.

Which can hear better in the forest, an Indian or a white man? Why? Why does the Indian need to hear quickly and well? Why does a hunter need to hear well?

Ask the children to give some other instances where it would be advantageous or necessary to have acute hearing and show them that anyone can train his sense of hearing if he will always pay careful attention when spoken to.

CARE OF THE EAR

Why should we not dash water against the ears when we wash our faces? We should wash the outer ear carefully with a soft cloth. The inner ear will usually keep itself clean.

We should never put anything in the ear. If something gets in accidentally we should go at once to our parents or to a doctor instead of trying to get it out ourselves.

Notice how children put on their hats and caps and do not allow these to be pushed down between the head and ears. Tell the children that such practice makes the ears stand out from the head in an awkward fashion, and also renders them liable to frostbite or injury.

Did any of you ever have the earache. Suggest that dry heat will usually cure it. A warm brick or a hot water bottle may be placed against the ear or a dry hot flannel will sometimes answer.

Show from a drawing the tube which connects the ear with the throat, and help the children to realize that smoking cigarettes or using tobacco in any form is likely to inflame the throat and lining of this tube. The swelling of these parts causes pain and may injure the hearing. All drinks with alcohol in them may hurt the hearing in the same way.

Made it very clear that in order to have good hearing and to keep it until late in life they must guard the ear in every way.

SENTENCES FOR THE BLACKBOARD

Our ears tell us what sounds are made.

We have an inner ear and an outer ear.

We must train our ears by listening to what is said to us.

Alcohol and tobacco may hurt our hearing.



Experiments made by Dr. Scougal upon the sense of hearing show that alcohol in small quantities may affect this special sense injuriously.—J. W. GROSVENOR, M. D.

Alcoholic liquors long continued, may cause a congestion of the internal ear, and by producing a similar pathologic condition in the throat set up diseases in the middle ear, through the Eustachian tube.—FAYETTE C. EWING, M. D.

Upon the brain, the ill effects of smoking, may be manifested in vertigo, weakness of memory, and loss of power of concentration of the mind.

Hearing may be impaired for feeble or loud sounds, and sometimes a peculiar ringing, lasting several minutes, is produced in the ears.—LABAN DENNIS, M. D.

THE NEW BABY

BY ANNIE HAMILTON DONNELL

OUT on the door-step, the windiest morning,
Bright hair for the little head's only
adorning,
His eyes ablaze with excitement and joy—
The wee little will-o'-the-wisp of a boy!
I was going by as straight as you choose,
When he hailed me with this astonishing news:
"O, sir, did you hear 'bout our baby up-stairs,
A-thout any teeths and just two or free hairs?"

"Her eyes are shut up so you can't look frow,
But I opened one, and *that* one was blue.
She's only just *Her* till we name her a name,
'Cause, don't you see, mister, she's only just
came.

She's most too teenty to tickle and touch,

"Where are you going?"

"To my grandma's."

"Let me see that note in your pocket."

The look of innocent surprise in the round face ought to have shamed the baby's tormentor, but he only said again, "Let me see it."

"I tan't," said Robert Cullen Deems.

"See here, if you don't, I'll scare the horses and make them run away." Rob cast an apprehensive look at the horses, but shook his head.

"Here, Bub, I'll give you this peach if you will pull that note half-way out of your pocket."

The boy did not reply, but some of the older people looked angry.

"I say, chum, I'll give you this whole bag of peaches if you just show me the corner of your note," said the tempter. The child turned away, as if he did not wish to hear any more, but the young man opened the bag, and held it out just where he could see and smell the luscious fruit.



"The joy, the solace, and the aid of man;
The rich man's guardian, and the poor man's friend
The only creature faithful to the end."

But I appreciate her very much.
Her nose is pug—but it might be pugger.
If you'll 'scuse me now, I'll go in and hug her."
—SELECTED.

ONE SMALL MAN'S PLAN

THE "blue-line" street-car stopped at the corner, and a rather anxious-looking young woman put a small boy inside.

"Now, Rob," she said, as she hurried out to the platform again, "don't lose that note I gave you; don't take it out of your pocket at all."

"No'm," said the little man, looking wistfully after his mother as the conductor pulled the strap.

"What's your name, Bub?" asked a mischievous-looking young man sitting beside him
"Robert Cullen Deems," he answered, politely.

*Courtesy of Suburban Life.

A look of distress came into the sweet little face; I believe Rob was afraid to trust himself, and when a man left his seat on the other side, to get off the car, the little boy slipped quickly down, left the temptation behind, and climbed into the vacant place.

A pair of prettily gloved hands began almost unconsciously to clap, and then everybody clapped and applauded until it might have alarmed Rob, if a young lady sitting by had not slipped her arm around him, and said with a sweet glow on her face:

"Tell your mamma that we all congratulate her upon having a little man strong enough to resist temptation, and wise enough to run away from it."

I doubt if that long, hard message ever reached Rob's mother, but no matter, the note got to his grandmother without ever coming out of his pocket.—*Youths' Companion.*

THE FOOD VALUE OF ALCOHOLIC BEVERAGES

BY JOHN MADDEN, M. D.

THE writer of a recent editorial declared that the question as to whether alcohol is a food or not depends upon the definition of "food." He might have gone further and said that any definition which would allow alcohol to be classed as a food would be fatally defective.

Without desiring to seem presumptuous, I suggest the following definition of food: A food is any material substance which when taken into the body will supply the needs of the body for that particular substance, without injury to the structure or functions of the body. This definition admits all classes of food and all substances making up each class, and shuts out all excess. Meats, starches, fats, and sugars are foods; but any of them taken in excess might render the organism incapable of performing its functions in a normal way, but they are foods nevertheless, and each taken in quantity to meet the body's needs for the purpose of repairing waste or for supplying heat or muscular energy is beneficial to the organism.

The only function that alcohol can perform as a food is to supply heat by being oxidized within the body. This is a function performed by the fats, in a less degree by the sugars and starches, and in a still smaller degree by the nitrogenous compounds. Alcohol, however, can not take the place of any of the classes of foods, in quantity to supply the heat of the body without great injury to both structure and functions.

Of the alcoholic beverages, spirits have no material capable of giving rise to heat, when oxidized within the body, excepting alcohol. The alcohol content of the spirituous beverages runs from forty to fifty-two or fifty-three per cent. Wines contain from seven per cent in the lightest clarets to forty per cent or more in the heaviest ports; but some wines contain a small percentage of sugar. The malt beverages contain from two to three per cent of alcohol in the lightest beers to six or seven per cent in the heaviest ales. Besides, they contain a small percentage of glucose, and some of them a small quantity of extractive matter derived from the gluten of the malted grains. In most malt liquors, however, the gluten products are removed because they make the beer cloudy. The high temperature necessary to make beer destroys the diastase produced in the malting process.

Coming back to the question of alcohol being a food, the work of experimental science has conclusively demonstrated that whenever

alcohol is imbibed in quantities sufficient to produce any noticeable effect, both physical and mental capabilities are decreased. If alcohol were substituted for the necessary fat and carbohydrate food, to give heat to the body, the quantity containing the heat equivalent of the fat and carbohydrate food would produce fatal alcohol poisoning. Alcohol, therefore, cannot be considered a food.

Spirituous drinks are not food, because they contain only alcohol as an oxidizable material. Wines and malt liquors are foods only to the extent of the small amount of carbohydrate material they contain, but should they be given in quantity to supply the body's needs for carbohydrates, their alcohol content would produce constant symptoms of alcoholic poisoning.

It is hardly likely that any one who has seriously thought of the matter in an unbiased way has ever had the conviction that alcoholic beverages have a food value worth considering. To say that alcohol is a food to the extent that it is oxidized within the body and gives rise to heat is a play upon words, an abuse of the word food.—*American Issue.*

The German Emperor has ordered that the pamphlet "Alcohol and Military Efficiency", published by the German temperance society be distributed to all new recruits and also to those received since the last enlistment period.

Dr. G. Ausmussen, a leading German engineer who has been journeying and making observations in America, says that we look upon the drink problem entirely from the practical standpoint. Americans do not drink, he says, because by that course their heads are clearer, their health is better, and their purses heavier.

A recent number of the *Deutsche Monatschrift* speaks of the grave and pernicious consequences of the custom, which so generally prevails in Germany, of a free indulgence in alcoholic liquors and discusses some of the methods being resorted to to eradicate the evil. In every class of society the consciousness is gaining ground that decisive measures must be taken to moderate an evil which is a hindrance to the development of the German people economically, physically, and spiritually. The writer states that the United States has thus far taken the most advanced measures to fight the liquor abuse and this movement is being greatly aided by a diffusion of knowledge, far more general than in other countries, regarding the noxious effects of the liquor habit and the great advantages of total abstinence.—*Review of Reviews.*

School Physiology Journal

COPYRIGHT APPLIED FOR

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, ACTING EDITOR

EDITH M. WILLS, Assistant Editor

Published monthly at 23 Trull St., Boston, Mass.

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"This I learned from the shadow of a tree
That, to and fro, did sway upon the wall
Our shadow selves,
Our influence may fall
Where we can never be."

A PROBLEM IN ARITHMETIC FOR NORMAL SCIENCE TEACHERS

If a normal school graduates yearly 50 pupils each of whom takes a school containing, on an average, 25 boys and girls, what is the new "sphere of influence" every year for the normal school teacher? Twelve hundred and fifty young people.

By the end of five years, the lives and habits of no less than 15,000 boys and girls and their homes will have been more or less shaped by one normal instructor.

There are about 300 normal schools in the United States. What is their united field of influence for health and sobriety in five years? At least 4,500,000 children and their homes.

There is not a health association nor a temperance organization which, in proportion to its number, has the power or opportunity of these 300 normal science teachers in effecting for good the habits of so many millions of our future citizens and home-makers.

The best methods of teaching grammar, geography, or number will fall short of greatest results if the teacher does not know how to deal practically and inspiringly with problems which she is sure to meet sometime, such as unhygienic habits, children made stupid by the beer given them in ignorance by their parents, the boy beginning the use of the cigarette, all of which (and others) will stand in the way of the child's mental, moral and physical development.

The normal science teacher who recognizes his opportunity and responsibility sees to it that no class leaves him without thoughtful and definite discussion of the preventive method of meeting these problems viz: instruction of the

children in the laws of health, teaching them how to observe these laws and why, and why abstinence from alcoholic drinks and other narcotics is wisest.

If any normal school teacher does not know what points his teaching ought to cover, let him ask the graduates of his school for the last five years and he will find himself provided with an abundance of suggestions.

BOOKS AS A FACTOR IN EDUCATION

THE pedagogical pendulum swings now toward one extreme, now toward another, the net result being that the clock of progress keeps fairly good time.

Some years ago a good deal was heard of the advantages of oral instruction over the use of text-books by pupils, a reaction, no doubt from the old-time memorizing method of using text-books. But the pendulum swung back again and now the belief is generally held that the best results are secured from a combination of oral instruction and good text-books.

In the evolution of the study of hygiene and temperance, the consistent advocacy of a text-book on this subject, adapted to grade, for the use of pupils who use text-books in other subjects has sometimes been misrepresented, its purpose maligned. Nevertheless, the principle is the right one, and is steadily gaining ground, although now and then, one still finds a school board or director or even a state superintendent of public instruction who thinks that instruction in the facts of this subject ought to be given orally only. As has been repeatedly stated in these columns and elsewhere, the recommendation of a suitable text-book does not mean the use of the old memorizing method, although Dr. Harris in the article published elsewhere in this number shows that even memorizing is a higher form of mental activity for the child than mere reception of oral instruction.

The proper use of a book by the pupil and its advantages are admirably pointed out by Dr. Harris, and his argument applies to the study of physiology and hygiene as well as to that of other branches.

An instructor in one of our medical colleges said recently when speaking of the use of the stereopticon as a supplement to his lectures and the pupil's laboratory work, "I am appealing more and more to the intelligence of my pupils through the eye, rather than depending on reaching them by the ear only."

Neither method used alone is most effective, but the best results can not be secured by depending solely on oral instruction after pupils reach an age when they should begin to learn to acquire information from the printed page.

THE CHILD, THE DOCTOR, AND THE SCHOOL

BY DR. J. JOHNSTON

BOLTON, ENGLAND.

The following is part of a speech recently delivered before a Conference by Dr. Johnston in support of a resolution offered by him urging that, in view of the deleterious effects of intoxicating drinks upon the child-life of the nation, Hygienic and Temperance Teaching be given in all public schools in Great Britain under the direction of the Board of Education. The resolution was unanimously adopted.

THE subject of this resolution can not be disposed of as a teetotal fad for it originated in the ranks of the medical profession, and it has the support not of a small section, but of practically the whole of it. Of the many proposals for dealing with the drink question this occupies one of the highest places, for, next to the abolition of the drink, is surely the abolition of the drinker. And this is the practical aim of the resolution. We can not yet hope to stop the manufacture of drink; we can attempt to prevent the creation of the drinker, and thus strike at one of the roots of the gigantic upas tree which is sapping the life of our nation.

Brain education is impossible without body education; mentality is impossible without physiology, and the state which has made itself responsible for the mental equipment of the children, can not consistently refuse to sanction their health education.

Health is the working-man's chief asset; it is often his only capital, and he has an inalienable right not only to be taught book-learning, but health-learning, and this when he is at school, when his mind is open to truth and capable of being moulded by it.

He has a right to be taught something of the elementary laws of health, and of the causes of disease. Disease, for instance, is not a thing which enters the body from without and has to be dislodged, but is simply a changed condition

of the body, a state, and these changed conditions or states are often the natural and inevitable results of our habits of life.

He has a right to be taught how to keep his body healthy, to be told something about food, clothing, cleanliness, exercise, rest, warmth, etc., as well as about grammar and arithmetic.

He has a right to be told something of the truth about alcohol which, as Sir Victor Horsley says, "Next to the microbic world, is the commonest source of disease, poverty and crime."

An adult man or woman may be convinced of the harmfulness of alcohol, but such teaching,

to be effective, in guiding conduct, must be begun in childhood. Nothing but total abstinence from childhood onwards will ever completely eradicate the drinking habits of this country, and the future happiness, health, and prosperity of our country depend upon their being taught in the schools, and lived out in the lives of our people.

From the returns supplied by Mr. Winston Churchill to the House of Commons, we find that the teaching of Temperance in schools is compulsory in Ontario, Canada, British Columbia, and Victoria, also in Natal, and in all our foreign

stations west of Aden, in the United States of America, and in all our army schools. So it is no innovation that is being asked, but that we may follow the lead already widely given.

What blindness and stupidity it is to go on framing laws for the management of inebriates and to refuse to sanction the teaching in schools, which would prevent the manufacture of inebriates altogether. But all great ideas move slowly, and it remains for us to keep well in the front, and not to rest until the children of the rising generation are taught the evil of drinking, and that only by abstaining from it can they hope to attain the highest and best of which they are capable.

October's Bright Blue Weather

"Suns and skies and clouds of June,
And flowers of June together,
Ye cannot rival for one hour,
October's bright blue weather.
When loud the bumblebee makes haste,
Belated, thriftless vagrant,
And golden rod is dying fast,
And Leaves with grapes are fragrant.

"When gentians roll their fingers tight
To save them for the morning,
And chestnuts fall from satin burrs
Without a sound of warning;
When on the ground red apples lie
In piles like jewels shining,
And redder still on old stone walls
Are leaves of woodbine twining;

"When all the lovely wayside things
Their white-winged seeds are sowing,
And in the fields, still green and fair,
Late aftermaths are growing.
O sun and skies and flowers of June
Count all your hosts together,
Love loveth best of all the year
October's bright blue weather."

HELEN HUNT JACKSON

Grammar
LessonsSIXTH
YEAR

THE SKIN THE BODY GARMENT

PERHAPS no habit the child can form will go further to create and conserve his own self-respect and thus compel the respect of others, than that of scrupulous personal cleanliness which opens the way for cleanliness of the personal environment, to refinement of manner and to heart purity. Moreover the teacher should bear in mind the fact that the child needs training on these lines as a part of his moral development.

Lay stress upon hygiene rather than physiology paying special attention to the particular needs of the pupils in question.

USES OF THE GARMENT

Of what use to the tree is its bark? Why does the man who handles rough or heavy objects wear thick gloves? If a piece of skin is accidentally removed what is the condition of the flesh so exposed? What would happen if poison should get on the place?

By questions develop the point that the most important use of the skin is to clothe the tender flesh and thus protect it from hurts, from disease germs, or from injurious substances that might cause blood poison. In this connection warn the children to avoid danger by keeping every kind of a wound perfectly clean and well covered from the air.

Ask one member of the class to bring a clean, dry fruit jar which should be cooled. Let him put his hand into it and invert the jar.

Let others press the hand upon a slate or clean slate blackboard. Note the moisture that soon collects on the inside of the glass, and on the slate. What appears on the skin when one is very warm? What is this moisture? Where does it come from?

Develop the second point that the skin is always throwing off waste matter of the body by way of the little perspiration tubes and that when the body gets heated, more moisture is thrown off to cool the skin. Examine the tiny

openings in the palm of the hand under a magnifying glass. Call the attention of the class to the fact that since part of the impurities thrown off by the skin dry upon it and the rest are absorbed by the underclothing, both skin and clothing require frequent cleansing.

HOW THE GARMENT IS MADE

For illustrative material procure a number of fish scales. Get also if possible some cross sections of bark from the trunk, or large limb of a tree (the more recently cut the better) which will often show cells in the inner bark. If these are not available a good sized twig will do. With a sharp knife cut the twig or sections of bark in short lengths and on each, separate a portion of the rough outer bark from the inner fine bark. Give each child one or two of the fish scales, and a section showing the bark.

Ask them to observe the latter specimens carefully, using a magnifying glass if one is at hand. By questions and comments develop the fact that the bark consists (1) of an outer tough layer (in birch or cherry this readily peels off separately) which protects the inner parts from rough usage; and (2) of an inner sensitive one which is composed of what we call cells through which the sap circulates. This inner bark is scarred or injured by a deep cut or bruise.

Compare the skin of the body to the bark of a tree showing that it also consists of two layers, one tough, the other sensitive.

How many have ever had a blister on the hand. Explain that what appears as the blister is the outer skin. How thick was it? Compare the outer skin with the outer bark of a tree and point out that while the scarf skin seems to be in one piece, it is really composed of several thicknesses of scales something like the fish scales before the class, but thinner and hundreds of times smaller. How are the outer scales fastened together at the edges? Note the resemblance of a bit of dandruff to the fish scale.

Now compare the inner skin to the inner bark of the twig. Note that the inner bark is apt to be thicker. Why? Which layer of the skin would be likely to be thicker? The inner skin is made up of living cells. What in the skin corresponds to the sap in the inner bark? If the flesh is pricked anywhere what happens? Develop the point that the inner skin in all parts of the body has tiny blood vessels and nerves. What gives the skin its pinkish color?

What makes the difference in complexion of the blond and brunette, the Indian and the white man? What arrangement of the skin at joints like those in the fingers so that the garment will not be too small? What keeps the skin soft and flexible?

HOW THE GARMENT IS REINFORCED

Which would hurt most, a blow on the palm of the hands or on the finger tips? What arrangement is there for stiffening the ends of the fingers and protecting their sensitive tips? What other purpose do the nails serve? Develop the points that the nails are a form of the outer skin, are composed of cells which start at the base of the nails in little pockets of skin; as the new cells form, they push on the old ones and thus the nail grows. How often and in what manner should the nails be cut? Why not bite them off? Make it clear to the class that there is real danger from lack of cleanliness about the nails because it is easy for disease germs to lodge under them.

What covering has the head? Why does the boy whose hair is cut quite short have a cold head? Would the boy with thick hair feel a blow on the head like one with thin short hair? Show that the hair protects the head from cold, heat and blows. Ask members of the class to bring pictures showing how the people in different countries dress their hair.

What is the use of the fringe of hair on the eyelids? the little arch of hair over the eyes? the beard on a man's face? How is the hair oiled? Do Indians wear hats? Why not?

Speak of the beauty of nice, well kept hair, both in boys and girls, and point out the means by which every child can become the possessor of fine glossy hair and can even thicken it when there is a scanty growth. Follow up the lesson by judicious praise of unusual care of the hair and gentle reproofs (in private) of those who are still careless in the matter.

HOW THE GARMENT IS TO BE KEPT BEAUTIFUL

Children love beauty and wish to embody the

*Note. The health of the child who is a confirmed nail-biter should be carefully observed, for some writers claim it is an indication of a disordered nervous condition.

beautiful in their own persons, therefore, the teacher may wisely treat the cleanliness and hygiene of the skin from the standpoint mentioned above. Be careful, however, to treat it broadly enough to interest the boys as well as the girls in the class.

Ask the children to describe a baby's skin, drawing from them: that it is lovely because it is perfectly clean, is soft and velvety to the touch, and the outer skin is so transparent that the clear pink shows through; it is not muddy, sallow, or disfigured by scars or pimples. Why?

Discuss the care the baby has: How often is the baby bathed? Is he given rich or indigestible food? How much does he sleep? Is his blood pure?

How many would like a clear, lovely-tinted skin? Point out that the requisites for a healthy attractive skin are first, cleanliness, then simple food at regular hours, plenty of sleep, and pure blood which requires plenty of exercise in the open air. On the other hand show that indigestion or rich food is likely to make the skin muddy or sallow, and that pimples are often caused by lack of care in bathing.

Discuss carefully the matter of bathing, showing its necessity because of the waste matter always being poured out, and the soil which gathers on the skin; also the need of keeping the



"Even from the body's purity, the mind
Receives a secret, sympathetic aid."

pores open. Show also that the daily cool sponge bath followed by friction is needed to give tone to the skin and to encourage circulation in the little blood tubes and prevent colds, and that it may help the person avoid some infectious diseases. Warn against bathing directly after vigorous exercise, when one is very warm, before going out into cold air, or just after a hearty meal, and point out that strong swimmers who have violated this last rule have often had cramps and have drowned. Alexander the Great nearly lost his life in this way at one time.

Point out that one who uses alcoholic drinks freely is likely to injure the appearance of the

skin because alcohol enlarges the tiny blood tubes making the face red, and sometimes produces pimples or blotches. As many boys begin about this time to form the cigarette habit the teacher should emphasize the bad effects upon the skin following the use of this form of tobacco. Remind them the pale, sallow skin which cigarette smokers are apt to have.

They have already learned that the true skin contains a network of tiny blood tubes which, when filled with pure blood, give the skin a beautiful pinkish glow. What, then, must we conclude is the condition of the cigarette fiend's blood. Point out the fact that mischievous as are the effects of this vice on the skin, they are not to be compared in extent with the injuries to the entire system of which the pallid skin is only one symptom.

WHAT THE BEAUTIFUL GARMENT DESERVES

Ask the girls what is done with their nicest dresses after they have been worn. Point out that the beautiful body garment should induce its owner not only to give the garment itself the choicest care, but also to provide for it entirely suitable surroundings. Lead the class in a discussion of how often the clothing worn next the skin, and the bedding should be washed, and how dried; the necessity for perfect cleanliness of dishes, cooking utensils, refrigerators, kitchen and dining room where food is prepared and eaten; of living rooms, and of the schoolroom, making it clear that real cleanliness must include all one's environment.

PUZZLES FOR THE CLASS TO SOLVE

Why does fanning cool the skin?

Why does a warm wind seem cool when one is perspiring?

Why does it not hurt to prick a blister?

Why is the skin under the nails called the "quick?"

Why do most business men decline to engage boys whose fingers have yellowish-brown stains?

What makes the hair "stand on end?"

Dr. William T. Cathell declares that cigarette-smoking makes a delicate person's lips and face lose their natural healthy hue quicker than any mode of using tobacco.—J. M. FRENCH.

If alcohol be used in comparatively small amounts for a long period of time, the capillaries of the skin become permanently dilated, thus giving the skin, especially of the face, a very red appearance. When it becomes thus changed, it cannot properly perform its portion of the work of excretion.—S. HALL, PH. D., M. D. (Leipsic.)

FROM A GERMAN STANDPOINT

BY DR. DICKE

SINCE temperance instruction in America was made compulsory, the battle there against alcohol has made astonishing progress among all classes. The number of total abstainers is estimated at ten millions, beside the many who drink very moderately.

De Terra has correctly said that the obligatory instruction in the United States has played a very important role in the enlightenment of the American workman.

Dr. Lacquer, who traveled through North America for the purpose of studying the methods and results of the struggle against drink, calls especial attention in his report to the great good that has followed the institution of compulsory teaching concerning alcohol in all the schools. The result is shown in the fact that the American workman far exceeds the German in health and endurance. . . .

TEMPERANCE TEACHING NECESSARY AND ADVISABLE

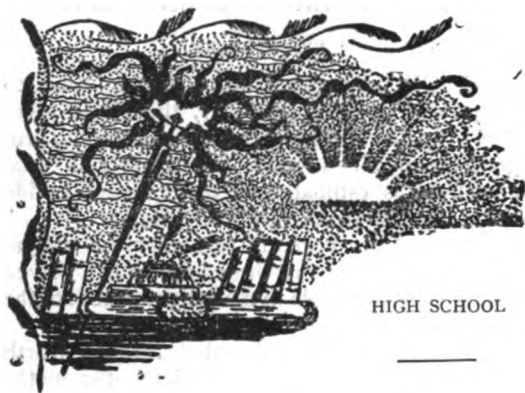
The objection in Germany that the schools are so overburdened with other subjects that there is no time for this, ought no longer to be raised, for it is virtually saying that the less exceeds the greater. The question is, which is more important for the welfare of the German nation, instruction in subordinate subjects or thorough information of the young concerning the destructive craving for alcohol. Secondary subjects must give place in order to gain the necessary time for this, the far more important one. . . .

The objection can not be seriously raised that compulsory instruction is not advisable on the ground that many teachers, holding the old opinions, are not convinced of the injuriousness of alcohol. There is no better way for teachers to gain information on the subject than by teaching, it for that makes it necessary for them to study it. This study of the alcohol question is no longer difficult for the qualified teacher, for the subject is now treated in all its various forms in numerous books and papers.

Teacher, in her physiology class: "Why do we have nails on our fingers?"

Seven-year-old Henry, waving his hand with the energy born of a new idea: "To tack the skin on."

M. L., Pennsylvania, "The September number of the Journal is excellent and most attractive. It has a great deal in it."



THE ASSIMILATIVE SYSTEM

NECESSITY AND CHOICE OF FOODS

Review the muscular system briefly, showing that all the vital processes and work depend directly upon the energy generated by the oxidation of particles of food in individual cells. Bring out the need of food (1) to build up and repair tissue (2) for the production of heat and energy. How much and what kind of food material is required by an adult for these purposes?

The answer to these questions involves a careful study of the amount of the proteids and salts and the number of calories of energy required. The body of an average working-man uses from 80 to 130 grams of proteids, 25 grams salts, and from 2700 to 3500 calories of heat, together with a supply of water and other material necessary to facilitate excretion. What will be required to make the material good? Ask the members of the class to suggest the various substances taken as foods, drinks, relishes, and condiments. Classify them as proteids, carbohydrates, fats, salts, water; indicate their source, and note those which are not true foods.

Let the teacher, or better still, one of the pupils interested in chemistry, demonstrate before the class the constituents of some of these foods using, for example, the iodine tests for starches and the Fehling solution for albumins. (Full directions for these experiments as well as many others may be found in all up-to-date high school physiologies, the textbook by Dr. Hewes, "New Century Series", giving particularly full directions and formulas.)

Prepare tables of food values, if these are not found in the text-books, and ask each pupil to make up a well-balanced dietary scheme for different individuals. Let these vary widely, e. g., a lawyer, student, laborer, vegetarian, living in the pupil's own state; an Esquimo, Hindoo, Japanese soldier, etc. Lead the class to see that a wise choice of foods for the individ-

ual should also depend somewhat upon (1) climate, (2) business, (3) personal idiosyncrasies, (4) degree of health, and point out the possibility of correcting inherent or acquired weaknesses of digestive and excretory organs by properly arranged dietaries. Have the class make out menus and discuss the comparative cost of the main food staples pointing out that many of the most inexpensive foods such as rice, corn meal, skimmed milk, and cheap cuts of beef are actually more nutritious than some higher priced foods. Discuss the desirability of cooking most foods and the best methods of food preparation.

What is to be said of the food value of tea, coffee, olives, pickles, and the like? Why are all alcoholic drinks excluded from the list of foods? (See "Food Value of Alcoholic Beverages," page 24). Be sure to show the fallacy of the claim that beer is liquid bread and that ales and wines build up strength.

ORGANS OF DIGESTION

How can potatoes, beef, and bread be changed into blood, and muscle, bone and nerve tissue? Why must digestion take place? Make sure that the class understand that minute as the molecules of food are, they are still much too large to pass through the walls of the intestine and hence must be changed into substances having still smaller ones. Note also that as the mucous membrane is continuous with the skin from the lips down, the food is really outside of us until absorbed through the wall of the intestinal canal. Food which remains undigested favors the growth of germs by fermentation and is a fruitful cause of auto-toxication.

Beginning with the mouth, discuss in turn the anatomy and physiology of the digestive organs including the glands, pancreatic and liver, pointing out that the latter is also an organ of excretion.

If desirable, secure for illustration small sections of beef or hog's liver, intestine and stomach walls, or even the entire stomach of a small pig. These should be carefully cleaned and prepared beforehand. An exchange suggests that a solution of formalin in water (1 to 30) will preserve such specimens in natural form and color.

PROCESSES OF DIGESTION AND ABSORPTION

Suppose a lunch consisting of a buttered beef sandwich and a glass of milk. Demonstrate by means of test tubes (small vials will answer nicely) the effects of saliva on a bit of bread, gastric juice upon a small quantity of finely minced beef and upon milk, and the effects of the pancreatic juices and bile upon small portions of each.

Provide three or four tubes to show the action of gastric juice on albumins and by the addition of very small quantities of beer to one, wine to another, and whiskey to a third, show how all these drinks tend to retard digestion. What is meant by peristalsis? By motility?

Now ask your pupils to trace, by means of a written scheme, such a lunch through the process of digestion noting the chemical changes following the action of (1) ptylin of saliva (2) acid, pepsin and rennin of the gastric juice (3) amylase, trypsin, steapsin, and bile in the upper intestine and (4) the intestinal juices lower down. Or, vary the exercises by requiring some of the class to write similar outlines regarding other complete lunches.

Make a careful study of the villi and lacteal system. Be sure that the processes of absorption by (1) imbibition and (2) osmosis are clearly understood. Dr. Hewes likens the intestinal cells to porters unloading a ship into railroad cars, the merchandise, (food molecules) being taken from the ship (intestine) and put upon the railroad (the blood vessels), which distribute it over the country (the body).

This part of the lesson may very easily be correlated with English. Ask the pupils to write the story of the digestion and absorption of a lunch, personifying the main actors in the process. The "Peptic Romance" (page 32) will no doubt prove suggestive along these lines.

HYGIENE OF ASSIMILATION

Point out the fact that decayed teeth menace health by harboring disease germs and by throwing off toxic elements that drain into the stomach.

A millionaire dyspeptic is said to have vainly offered a million dollars to be cured. Mention several causes that might have brought on this disease; give as many hygienic rules, which if followed, would insure good digestion down to old age. Debate the following question: Resolved that it is "better to be temperate [in eating] in youth than be abstemious in old age."

Place the following quotations on the blackboard and have them copied in permanent notebooks. Discuss and compare with similar statements in text-books. Note that recent experiments of great scientists go to show that alcoholic beverages (1) have little therapeutic value and (2) tend to retard peristalsis, (3) inhibit the action of all the digestive ferments, (4) produce disease of the liver. What is the effect of tobacco on assimilation.

AUTHORITATIVE QUOTATIONS

It is strange that wines have received such marked recognition as therapeutic agents, for

experiments point to the fact that their power to inhibit digestion, salivary, gastric, and pancreatic, is out of all proportion to the amount of alcohol they contain.—PROF. HENRY BRACHEN, Univ. Minn., *International Clinic*. (1898.)

Buchner, Gluzinski and others have shown that moderate amounts of liquor diminish peristalsis.—Philadelphia *Medical Journal*, (1903.)

In the chemical laboratory at Krakow in 1895 and again in 1899 I performed a long series of experiments on the effects of smaller and larger quantities of alcohol on the ferments, pepsin, ptyalin, trypsin, rennet, invertin and diastase. The results showed that all these ferments worked less actively in combination with alcohol or medicinal wine, and with large amounts became inactive.—DR. WORBLEWSKI, *Internationale Monatsschrift* (1904.)

Peptic digestion is slowed by 2 per cent, greatly slowed by 10 per cent, and almost suppressed by 15 per cent solutions (Schulz) and the activity of ptyalin is similarly reduced (Aitchison, Robertson). The duodenal, pancreatic, and intestinal digestions suffer secondarily. The appetite is diminished or suppressed and assimilation is checked.—Watson's *Encyclopaedia Medica* (1899.)

EFFECT OF TOBACCO ON APPETITE AND DIGESTION

On the stomach marked effects are produced. The natural appetite is impaired, and the tobacco seems to take the place of food, probably, in part, by benumbing the acute sensibility of the nerves which give the sensation of hunger. The bitter extract produces redness and irritation of the mucous membrane whose duty it is to secrete the gastric juice for the digestion of the food, so that the amount secreted is often less and the quality lowered; hence digestion is impeded and acrid fluids are left behind, giving rise to heart-burn, nausea, and debility of stomach.—LABAN DENNIS, M. D., Report N. J. State Board of Health.

Alcohol is a potent cause of cirrhosis [hardening] of the liver.—JAMES BARR, M. D., *British Medical Journal* (1905.)

"Bobby had early shown a great interest in anatomy, and always drank in information about the various parts of the body most eagerly. One day he came to his mother in great perplexity and said: 'Mother, I know where my liver is, but where is my bacon?'"

"From dewy lanes at morning
The grapes' sweet odors rise,
At noons the roads all flutter,
With yellow butterflies."

A PEPTIC ROMANCE

BY MARY ROSSITER

THE digestive organs awoke with a start. The mouth felt bad, and the tongue was so thickly covered with germs that the salivary glands made fun of it. Their merriment, however, was of short duration, for the tongue retorted that they looked rather empty themselves, and the mouth remarked sternly that they had better be about their business, if they intended to moisten the breakfast.

The pharynx and esophagus were not very amiable, having a vivid recollection of some blistering salad that had made them smart the night before. The stomach examined its various pits and depressions with great anxiety. Its wrinkles deepened when it discovered a mass of decaying and fermenting food which had broken its rest for hours.

"This is terrible," groaned the stomach, "but what can I do? My muscular tissues worked as hard as they could for five or six hours, and the gastric juices dissolved everything possible. It is the imperative business of the pylorus to keep its orifice shut against everything unfit for the duodenum."

"I do hope," said a peptic gland to a pyloric gland near by, "that our dear stomach will not have so much to do today as it did yesterday."

"Yes, indeed," rejoined the second, "it was so exhausted last night when the last bit of chyme squeezed thru that I am sure it couldn't have contracted another time."

"And the worst of it is," continued the peptic gland, "there is a residue of indigestible things that have been here all night and those hateful germs are swarming all over the stuff. I did hope that we were going to starve them out, but the chance is gone for the present."

"It's all on account of that theater supper that came rushing down here pell-mell, late last night, just as we thought we had everything tidy and ready to leave," said the pyloric gland. "For my part, I think the mouth didn't do just right. It knew very well that the stomach had not had a moment's rest all day."

"But," remonstrated the peptic gland, "the mouth could not help it. It had to do just what the Man says and he is a perfect tyrant."

"But he must be a very wonderful being—that Man, to be able to defy and control the laws of nature the way he does."

"Wonderful, truly" said the other, "for my part, I believe that the Man is an imbecile."

"For mercy's sake, why do you think that?"

But before this question could be answered, the two glands became aware of a hurried rhythmic movement along the esophagus not far

away, and suddenly a gulp of hot coffee came plunging into the stomach. Several pieces of half-chewed toast mixed with oatmeal, sugar and cream, followed immediately. Then for several minutes large masses of half-masticated, peppery steak and fried potatoes came tumbling down without an instant's pause; and next the esophagus swallowed two buttered pancakes, a quantity of maple syrup, and a doughnut.

The stomach stirred feebly.

"What better evidence of imbecility do you want than that?" exclaimed the peptic gland, and it sent off a few drops of peptic juice to meet this food. "Look at that toast for instance, made of half-baked bread in the first place, and full of germs ready to do every sort of mischief. Then there is all that starch in the oatmeal, as well as the bread. I don't believe the ptyalin ever touched it, so we cannot do much with them. There is so much energy wasted by the Man. How ridiculous, too, to put sugar on oatmeal; just as if the body couldn't make all the sugar it wanted out of starch. The man can't know anything, or he wouldn't act so."

The stomach by this time had begun to recover from the shock of the arrival of the meal, and was calling for the gastric juices to come to its help. The latter needed no urging, but in numberless little globules ventured out from the tiny ducts, clung timidly for a moment to the edges of the alveoli, and then began to drop off bravely on the nearest mouthfuls; soon a steady stream of digestive fluid enveloped the entire mass of food, while the stomach's muscular layers began to contract, gently churning and mixing every portion of the breakfast. The mucous lining smoothed out its folds to make more room, and the corpuscles in the neighborhood crowded close to the transparent membrane.

So wonderful are the resources of nature, and so vigorously did the stomach attack its task, that possibly even this conglomerate breakfast might have been assimilated, had not the Man at this moment felt thirsty. The mouth, the pharynx, and the esophagus had been so irritated by the condiments forced against their surfaces that they sent up a lusty cry for water; hence, no sooner had the stomach put its energies in motion than a sudden flood of ice-cold water swept down into it, stopping all the secretions, driving all the corpuscles back from the walls, and paralyzing every activity.

It was some time before the corpuscles ventured back to their work and began to warm up the poor little glands that were stiff with cold. By and by a few drops of gastric juice oozed slowly forth and began a desultory work on the saturated food. By degrees the muscular tissues resumed operations, and digestion proceeded.

The stomach would have begun to ache, had it not learned by experience that if it did the Man would send down a pill or powder that would merely stop the pain and make matters still worse.

The stomach loved the Man, and had never studied physiology, yet it knew by instinct that his course of life was all wrong, that there was no possible harmony between the food he ate and what he expected of it after assimilation. It saw plainly that the Man was slowly but certainly starving and poisoning himself to death. His bones, his muscles, his brain, his hair, his nerves, his blood, were all crying hungrily for food, and irritably refusing the poison that was sent them for bread.

And so the stomach turned to its army of little helpers. On the morning in question every particle of gastric juice that had been able to recover its vital power and to get a foothold on the coarse chilled masses of food, was earnestly at work dissolving connective tissue and making peptones. The acids of the stomach were breaking down the albuminous walls of the fat cells so as to set free their oily contents, and also dissolve the mineral salts. Not being able to act upon fats or starch, the gastric juice could not do much with the fried potatoes, the oatmeal or the toast. This was unfortunate, since none of the food had remained in the mouth long enough to be acted on by the salivary glands, therefore a large share of it could only be removed from the stomach by peristalsis.

"It is really pathetic," remarked the pyloric gland, "to see how those juices are giving their lives for the sake of the Man, and yet he never lifts a finger to make their sacrifice easier."

"What I am worried about," said the peptic gland, "is that we are not going to have any time for rest before the luncheon comes down. Not that I mind so much on my own account,

working when I am tired, but I have already secreted all the gastric juice I had prepared for. I cannot possibly get any more ready so soon.

"Well!" exclaimed the other, "I should like just once to lay my nerves on that Man. I am only a little ignorant pyloric gland, but I try to do what Nature tells me, and I am sure the Man does not, or else has never paid enough attention to what she says, to know. Sometimes I think he has never heard that it makes any difference what he eats; then again, I think that he doesn't care, that he just eats things that make that horrid little palate feel good, and does not care a thing about the rest of us.

But the patient little glands had no more time for society amenities that day. It would be tedious to tell of the ice cold ginger ale that sent a shiver thru every cell of the digestive organs; of the luncheon that followed the ginger ale; of the peppery soup that made the salivary glands feel lazy and hurt the linings of the esophagus; of the cold roast pork, and Saratoga chips, that sank like lead to the bottom of the soup; of the olives, the jelly, the salad, the pepper-sauce, the ice cream, and the chocolate cake, that made the stomach's afternoon one long torture; to tell again of the evening dinner, the roast chicken and French potatoes, the cucumbers and vinegar, the tomatoes with mayonnaise dressing, the coffee with green-apple pie and imported cheese. Perhaps it is cruel to mention the Welsh rarebit and the pint of beer that came down about midnight.

Suffice it to say that the Man was sick in the night. When a soft, kind tube descended thru the gullet to take away its revolting and intractable burden, the heart broken stomach that had worked so faithfully and conscientiously for forty years, heard the Man say between groans: "I have a beastly stomach. Were it not for that I should be a happy man."—*Health Magazine*.



**ARE YOU
A Primary-Kindergarten
Teacher?**

Th t is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the **ONLY HOUSE IN THE U. S.** putting up Kindergarten material especially for Primary Schools. If you will send for free catalogue now we will send you of charge instructions for using Kindergarten material in primary schools, the regular price being 25 cts.

FREE Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.

INTERNATIONAL COURSE OF STUDY IN PHYSIOLOGY AND HYGIENE.

Widely used in America, and reprinted in England and sent by a committee of the British Medical Association to every local School Board in the United Kingdom with a plea for its adoption. This course of study plans for fresh topics in each grade. With its help the teacher can make Physiology and Hygiene the favorite study of the course.

Send 10c for an "Educator's Package" of literature containing sample and up-to-date leaflets.

SCHOOL PHYSIOLOGY JOURNAL,
23 Trull Street, Boston, Massachusetts.

AN ATTRACTIVE OFFER

THE SCHOOL PHYSIOLOGY JOURNAL, (16th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "State Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00. Early subscribers get the September number with course of study for year. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL,
23 TRULL STREET, BOSTON, MASS.

NEW CENTURY SERIES

of Anatomy, Physiology and Hygiene

The latest series of physiologies published since the recent agitation regarding the systematic study of physiology and hygiene, including scientific temperance instruction, in our public schools. It represents the latest phases of scientific research and study, combined with the best methods of instruction. The books have been arranged in accordance with modern experimental methods and particular attention has been given to the treatment of alcohol and other narcotics and to the subject of right living.

Anatomy, Physiology and Hygiene For High Schools. By Henry F. Hewes, M. D., Instructor in Physiological and Clinical Chemistry, Harvard University Medical School.
Price, \$1.00

With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

Elementary Anatomy, Physiology and Hygiene For Higher Grammar Grades. By Winfield S. Hall Ph.D., M.D., Professor of Physiology, Northwestern University Medical School,
Price, 75 cents

Treated according to the inductive method, beginning with the easily observed facts of plant physiology and leading by comparison up to human physiology and hygiene. Simple illustrations and experiments, but no dissections, are presented in connection with the physiological facts. A particular feature of the book is the lessons on domestic economy which form a noteworthy contribution to one of the most important problems of sociology.

Intermediate Physiology and Hygiene For Fifth and Sixth Year Pupils, or corresponding classes in ungraded schools. By Winfield S. Hall, Ph.D., M. D., and Jeannette Winter Hall, Special Teacher of Physiology, Berwyn, Ill.
Price, 40 cents

The illustrations are a marked feature of this book, including both mechanical diagrams and attractive pictures designed to interest the pupil. Special attention is called to the simple comparisons of the bodies of human beings and of the lower animals. The object of this comparative study is to impress upon the mind of the pupil the unity of nature and to cultivate in him a love and sympathy for the lower animals.

New Century Primer of Hygiene First Book for Pupils' Use. By Jeannette Winter Hall.
Price, 30 cents

A simple and attractive presentation of the elementary facts of physiology for pupils of the fourth year grade. The language used is free from technical terms and readily comprehended by the child, while familiar facts are used to emphasize the principles discussed. Brief object lessons in general physiology are given, together with a simple treatment of the most important laws of hygiene. Contains numerous illustrations and useful and practical suggestions.

Oral Lesson Book in Hygiene For Primary Teachers. By Henrietta Amelia Mirick, A. B., Assistant Editor School Physiology Journal.
Price, \$1.00

A manual for the teacher, containing suggestive oral lessons on the most elementary facts of anatomy, physiology, and hygiene, for the first three years of school life. At the end of each lesson are brief memory points summarizing the most important features. Each day's work is thoroughly planned and made simple and interesting.

AMERICAN BOOK COMPANY, Publishers

New York

Cincinnati

Chicago

Boston

Atlanta

San Francisco



THE SCHOOL PHYSIOLOGY JOURNAL



• CONTENTS •

	Page
Temperance Education the world around	33
Temperance Education in our own land	36
Primary Lessons	
Third Year	38
Second Year	39
Editorials	41
Chapters in a Beer-Drinker's Biography	42
Grammar Lesson—Fermentation	44
High School Lesson—Effects of Alcohol on the Circulatory System	47

PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVI. NO. 3
NOVEMBER, 1906

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. So special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid to any address on request.

GINN & COMPANY Publishers

Boston

New York

Chicago

London

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.
\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

New Picture of Mrs. Hunt.

Large sepia-portrait of the late World and National Superintendent of Scientific Temperance Instruction, suitable for framing (size 18x23 inside measurements).

Sent postpaid \$1.00. By Registered Mail, \$1.06

Just off the Press.

Fine half-tone engraving (facsimile of large photograph) reproduced in soft gray tints, suitable for framing.

Sent postpaid \$.25, Registered \$.33

New series of

5 S. T. I. Souvenir Post Cards

Including portrait of Mrs. Hunt, Headquarters at 23 Trull Street, Mrs. Hunt in Study, Museum and Composite (3-view) card.

Price, \$.03 each; 2 for \$.05
Series \$.10

School Physiology Journal
23 Trull Street, Boston, Mass.

School Physiology Journal

Vol. XVI.

BOSTON, NOVEMBER 1906

No. 3



Whatever ought to be done, can be done, by whoever has the courage and the faith to undertake it, for Omnipotence is pledged to such an one.

SCIENTIFIC TEMPERANCE INSTRUCTION THE WORLD AROUND

FOR the first time the report of the World Department of Scientific Temperance Instruction is prepared by the hand of another than of her who has been the Department's only superintendent in its eighteen years of official existence, Mrs. Mary H. Hunt. While she would wish that the all too brief time be given to the work rather than to her memory yet this seems the fitting moment in which to voice briefly the tributes to her world-wide influence which, with expressions of the sense of personal loss in her going, have been a part of every message concerning temperance education received from lands throughout the world. Though Mrs. Hunt was intensely patriotic and bore on her heart the destinies of her native land as a part of her very being, she yearned even more deeply for the coming of God's kingdom over all the earth, and, in the spirit of world motherhood, craved for all humanity that freedom through knowledge of and obedience to the truth about alcohol and narcotics that would enable man to fulfil his divinely appointed end. Haunted "by that invisible power that can shape destiny for one obedient to the vision," Mrs. Hunt set forces in motion the result of which will only be read in the light of eternity.

Marble or granite can afford no fitting memorial, for she labored for the imperishable in humanity. Rather let her memorial appear in us who remain, in intelligent conviction, in renewed consecration, and in an impelling purpose to rest not until every child has come into his heritage of the truth about alcohol and other narcotics.

WHY MAKE INSTRUCTION COMPULSORY

Wherever the fundamental truth that alcohol is a race poison has been recognized efforts are being made to spread knowledge of that truth. It is seen that the school is the hope of the world in solving the problem; this instruction, the method for securing the desired result with the least waste of time and energy.

Progress is shown in the increasing demand that this instruction be made compulsory, the necessity of which was early learned in the United States where such teaching is now universally obligatory. Yet we are often asked, Why make this obligatory? Why not leave its requirement to the ministers of education, local schoolboards, the code, etc.?

1. Because with compulsory instruction all schools can thus by a single stroke be required

to give it. It saves the necessity of persuading every local school board.

2. Compulsory instruction becomes a part of the regular school course, and can not be crowded out on the excuse of an already overfull curriculum. Readjustment of the curriculum may be necessary, and will then be made to make a place for this branch. As Sir Victor Horsley says, "The English physicians ask that this study shall rank third in importance in the schools of the United Kingdom, language first, arithmetic second, hygiene and temperance third."

3. Obligatory temperance instruction insures greater permanency. An order issued by a minister of education or by a local school board may be reversed, so that there is no encouragement to the schools to rearrange the course of study to include this branch or to adjust themselves effectively to giving the subject the time and attention it deserves. It is not fair to those who have the schools in charge to place them in a state of continued uncertainty.

The law that is most specific, requiring that this subject be taught as a regular branch, with suitably graded books for teachers and pupils is the fairest to the teacher, because he then knows exactly what is expected of him and how far the law sustains him in his teaching.

WORLD-WIDE PROGRESS

Mrs. Hunt as superintendent kept constantly in touch with temperance education throughout the world, suggesting helps and methods where the work was begun, answering inquiries, stimulating interest, and sowing seed where the need was great and the realization of it small. Since the last report, correspondence has been conducted with twenty-three countries outside of the United States, among which may be mentioned the following:

Great Britain has been the scene of the most remarkable event during these three years. More than 15,000 physicians petitioned for public school instruction in hygiene and temperance in the early years. The scheme has been sympathetically received throughout the Kingdom. Local boards are putting the study into the schools and arrangements are being made for the suitable training of teachers. An outline of the topics to be taught based upon that prepared by Mrs. Hunt for American schools was recommended for the guidance of teachers by a distinguished committee of these physicians. Parliament has been petitioned by the British Woman's Temperance Association and other organizations to make the instruction compulsory, and the outlook is extremely encouraging in every direction. "It has been a very wonder-

ful piece of work," writes an honored British sister, one of the few who knew its beginning, "and its initiation was entirely due to the inspiration given by our dear Mrs. Hunt, when she was here, to one of our young workers who developed the plan which was worked out so successfully." This is not the time to tell the whole story of how this marvellously providential movement began, but as one who knew all the details, the writer desires to place this much of the facts on record for the encouragement of our hosts of women in every land. God brings his will to pass in wonderful and unforeseen ways when the hour is ripe for the accomplishment of his purpose.

Germany. For ten years the subject of temperance education has been pressed upon the proper authorities in Germany by the German Woman's Council and the Total Abstinence Union. The Prussian Minister of Education has issued a series of orders and suggestions towards making it a part of the school curriculum with a somewhat detailed statement of the facts to be taught. As one result of Mrs. Alli Trygg-Helenius' successful work before teachers, the Duke of Meinigen ordered regular temperance teaching throughout his duchy. The Woman's Total Abstinence Teacher's Union has outlined a plan of instruction for all grades with a list of the available text-books.

France and Belgium continue their temperance instruction which deals chiefly with the results of what they call the excessive use of alcohol. Time will prove that such teaching is but a broken reed and that the only salvation or a nation from alcoholism lies in abstinence.

Hungary. The Hungarian Minister of Education has issued a series of circulars enjoining school inspectors and teachers to acquaint themselves with the truth about the injurious effects of alcohol, to enlighten the pupils, to try to prevent their visiting public houses, and to set a good example. School authorities are directed to lend the school buildings for temperance meetings.

Sweden has a temperance education law, and reports that good headway is being made. Courses of well attended lectures for teachers have been given in different centers.

South Africa. By consent of the Educational Superintendent General of *Cape Colony*, one-half an hour a week is given to health and temperance in the schools. Many members of the new education boards throughout the Colony are pledged to introduce the study in the schools of their respective districts. This has already been done in Kimberly.

India, Burma, China, and South Africa report teaching in the mission schools. In *China*, Miss Kearney has addressed the National Edu-

cational Association on Scientific Temperance Instruction with the result that she was invited to visit mission stations throughout China. A petition urging compulsory scientific temperance instruction in the schools of *India* is shortly to be issued.

Japan. Temperance text-books and literature on temperance education have been translated and widely distributed. Efforts have been chiefly directed toward creating public interest in the scientific truth about alcohol.

Mexico. Mrs. Fields found ready entrance to the public schools for scientific temperance addresses, and undoubtedly prepared the way for the encouraging report first submitted by a committee of four leading educators which recommends that temperance teaching be made obligatory in the lower schools of the Federal District and in the territories of the republic; that every means shall be used to have teachers teach total abstinence; that the government prepare a book treating the subject to be taught. The Committee outlines a program of instructions and recommends supplementary methods, and helps in the form of lectures, charts and magic lantern temperance exhibitions.

Canada. In the Maritime Provinces the clear cut temperance education laws make the study compulsory. There are good, well graded text-books in use. Educational authorities and teachers as a rule are loyal and efficient work is the result. In Quebec, the teaching is a part of the moral instruction and lacks definiteness and system. In two of the four western provinces the instruction is optional and does not receive the importance it merits. In the other two provinces it is compulsory. The provincial superintendents "confidently anticipate the day when the knowledge of the truths that science teaches concerning alcoholic drinks shall be the possession of every child that passes through the public schools of Canada."

A BRIGHT OUTLOOK

One can not survey this world-wide field of labor for temperance education without a thrill of gladness for the progress made, an inspiring conviction that the hand of

God is in it, and an increased enthusiasm for this effort which cuts the very root of the alcohol-habit. Great things are in the making. The future is radiant with possibilities which we have not half comprehended. Let us not be afraid of the work because it is great.

Lay hold upon these essential truths:

1. Alcohol is a race poison.
2. Universal knowledge of this truth will eventually overthrow the evil.
3. Systematic, compulsory instruction of the children in this truth at an early age is the quickest, most effective means of disseminating this knowledge.
4. Temperance education is absolutely es-

sential to the permanent success of other temperance methods. B.T.E.

Make these truths a part of your daily consciousness; work for them with the intensity of your best efforts, for the life of the nations and the progress of the race rests in your keeping.

Let it not be thought, however, that our efforts can be lessened because we have temperance education laws everywhere. No law enforces itself. The population is constantly changing. Nearly three million immigrants are here today who were not here three years ago. A large majority of them bring the alcohol-using habit.

America's only hope of successfully grappling with this constant accretion to her alcohol problem and its attendant ills is to teach these new citizens, through their children in the schools, the truth about alcohol.

—Cora Frances Stoddard, Acting Secretary.

Little Dot.—"Teacher says we needn't all learn to write the same hand."

Mama.—"That pleases you doesn't it?"

Little Dot.—"Why, no. It's just as hard to learn to write one way as another. Now, if she'd only tell us we needn't all spell the same way, there'd be some comfort in it."—*Selected.*

"THERE'S nothing so kingly as kindness,
There's nothing so royal as truth."

*Courtesy of the *Phrenological Journal*.

TEMPERANCE EDUCATION IN OUR OWN LAND

PLATO tells us that when the ancient oriental dyers wished to dye wool the true sea purple they began by preparing and dressing the white ground with much pains in order that it might take the purple hue in full perfection. The color was then applied and whatever was dyed in this manner became fixed so that no washing with lyes could take away the bloom.

In the education of the boys and girls who throng her schoolrooms, America, through hygienic temperance instruction, is preparing the clear white ground work of intelligence concerning the true nature of alcoholic drinks and other narcotics, and on it is fixing that indelible royal conviction for abstinence which alone will resist the temptations to indulgence in the forms of pleasure, sorrow, and desire.

TEMPERANCE EDUCATION ESSENTIAL TO SUCCESS OF ALL TEMPERANCE MEASURES

Could we, by the touch of some magic wand, close tomorrow the door of every saloon, every brewery and every distillery of alcoholic beverages, we should have removed sources of temptation, but just as long as mankind believes that alcohol is harmless if consumed in moderate amounts, that beer is a valuable food, that alcoholic drinks give strength or warmth or endurance, just so long methods will be devised for indulging that ignorance. We must close the saloons. We may reform drunkards all we please—or can. We must provide counter-attractions, but the undeniable fact remains that if we do not teach the people the truth about alcohol itself in the habit-forming period of life, other efforts to settle this problem will fail.

TEMPERANCE EDUCATION ESSENTIAL TO PERMANENT TEMPERANCE RESULTS

Unless we teach the children of today the reasons why alcoholic drinks are a menace to the individual and to the nation, there is a very real danger that the work done now in closing the saloons, whether by local option, constitutional or statutory prohibition will have to be done over tomorrow. There will be a generation knowing nothing of the evil results of the open saloon with which we are familiar; if uninstructed in childhood and youth, they will not be fortified with the scientific truth about alcohol; and we shall see voters untaught by experience or knowledge deceived by specious arguments, time-worn, yet new to each generation in favor of opening the saloon.

These, then, are the underlying objects of public school temperance education: (1) To

save the individual through his own conscious choice in applying the truths he early learns about the laws of health and the nature and effects of alcoholic drinks and other narcotics; (2) To preserve the nation, the prosperity and integrity of which are menaced by the use of alcohol by its people; (3) To make permanent the fruit of all temperance efforts.

A LIFE WORK

It is sometimes encouraging and even necessary to review the past that we may wisely take our bearings for the future. It is peculiarly fitting that this should be done at this time since this year a life book has been closed, on the pages of which are written most of the general history of the temperance education movement. Beginning her labors for it more than thirty years ago, for twenty-seven years complete devotion to this work for humanity was Mrs. Hunt's daily life. Those who were closest to her knew that temperance education was never out of her thoughts and prayers for one waking moment. Long days, wakeful nights, wearisome journeys even after her wonderful physique had begun to fail before the power of disease, perpetual foresight, careful study, the elaboration of plans and execution of details, all were vital elements in that leadership which this organization has been proud to own to which the world pays tribute and with which, following as she has said, "the divine Leader without whose guidance and help all our efforts would have been in vain," such magnificent results have already been achieved.

THE POINT REACHED

Let our question, be, therefore, not how much have we done; that may lure us into a comfortable resting place beside the way, but *how far* have we progressed toward realizing our ideal—the thorough hygienic and temperance instruction of every one of the 22,000,000 children of school age in the United States, for "the greatest thing in this world is not so much where we stand as in what direction we are moving."

Laws have been enacted by Congress and every state legislature requiring this instruction in the laws of health and the nature and effects of alcoholic drinks and other narcotics.

Courses of study showing the topics to be studied in all grades have been prepared and widely adopted in American schools and made the basis of suggestions for temperance teaching in the schools of Great Britain and Germany.

More than forty approved school text-books on this subject, adapted to all grades from the first school year to the high school have been published by all the leading publishing houses. Five new books have been added to the indorsed

list in the past year and three of the old books have been thoroughly revised.

The work has its monthly organ, the SCHOOL PHYSIOLOGY JOURNAL, now in its sixteenth year, which carries directly to teachers helpful methods of instruction, scientific facts concerning alcoholic drinks and other narcotics in a form practicable for use in the schoolroom.

Research in medical and other scientific literature of all the leading nations upon the subjects in question has constantly been conducted under Mrs. Hunt's supervision to obtain the latest, best authenticated facts. The results have been collected and classified in a library which has no duplicate in the world and from which information is constantly sought by authors, lecturers, and students of this subject.

In the past three years fully 6,000,000 pages of educational temperance literature have been prepared by the Bureau and placed in the hands of the general public.

THE SECRET OF SUCCESSFUL WORK

The sum total of the work done by state, county and local workers can never be estimated. Despite discouragements, and often, indifference, thousands of our women have gone on bravely, enthusiastically, and successfully.

Each year sees progress in the assigning this study an adequate time and definite place on the school program. More care is given to the selection of books for the right grades. The books themselves, even those that are not indorsed, show constant improvement. Less and less is there a tendency to condone moderate drinking.

DANGER OF MISTAKING THE MEANS FOR THE END

All this work is largely that of perfecting the *mechanism* by which effective temperance teaching may be given. The enactment of the laws was only the first step, not the end.

All these years we have been collecting text-

books, courses of study, and teachers' helps, and training and interesting teachers.

Now all these varied aids to securing effective temperance instruction must be developed and used without ceasing, until every child is taught the truth, until he has acted on that truth, and the last legalized saloon, brewery and distillery has shut up for lack of business in alcoholic beverages. Then alone can we say our work is done or needs less expenditure of effort than in the days when temperance education laws were being secured.

SOME OF THE RESULTS

What of the actual results of the diffusion of scientific temperance information? In the nature of things these are less tangible than laws, text-books or literature or courses of study, yet they are written large in the lives of the American people. Among them are an acknowledged increase in general sobriety which is no longer regarded as an eccentricity but as a necessary qualification of the self-respecting, successful individual. There is a decrease in the rate of gain in our per capita consumption. The fact that there is any gain at all is largely explained by the influx of millions of immigrants most of whom have the alcohol-using habit.

Fully 9,000,000 of these people have come to us since the first temperance education law was enacted. This is not stated as a complaint, for we welcome the possibilities for good in these new comers. It is simply given as a fact which we should recognize when we are told that despite temperance education and a efforts for temperance the per capita consumption of alcoholic drinks increases even though at a diminishing rate of gain. It is one of the most vital reasons for thorough temperance instruction in the schools where alone we can influence at all universally the homes and children of these people.

(Continued on page 48)

Thanksgiving Ode

Once more the liberal year laughs out
O'er richer stores than gems of gold;
Once more with harvest-song and shout
Is nature's bloodless triumph told.
Our common mother rests and sings,
Like Ruth, among her garnered sheaves;
Her lap is full of goodly things,
Her brow is bright with autumn leaves.

O favors every year made new!
O gifts with rain and sunshine sent!
The bounty overruns our due;
The fullness shames our discontent.
God gives us with our rugged soil
The power to make it Eden-fair,
And richer fruits to crown our toil
Than summer-wedded islands bear.

Who murmurs at his lot today?
Who scorns his native fruit and bloom?
Or sighs for dainties far away,
Beside the bounteous board of home?
And let these altars, wreathed with flowers
And piled with fruits, awake again
Thanksgivings for the golden hours,
The early and the later rain!

JOHN G. WHITTIER.



Primary Lessons

THIRD YEAR

USE AND CARE OF THE LUNGS.

WHY LUNGS ARE NEEDED

HOW do you feel when you go into a room that is filled with smoke? In what part of your body is the feeling of suffocation? When you go into a room that has been shut up tight for a long while, how do you feel? When you go out of a close room into the pure air?

Where does the air go when you breathe it in? Put your hand on your chest and draw a long breath. What did the chest do when you did this? Let the teacher blow into a kid glove until it puffs out. Close the opening and show how the air keeps it expanded; release and note the result of the air passing out.

Again ask the children to place their hands on their sides, draw in a long breath and hold it an instant, then let it out slowly. Show that the lungs inside the chest hold the air just as the glove did, and shrink when it is expelled. Through what organs is the air taken into the lungs? (Nose and windpipe.) Explain why one should always breathe through the nose. Why do we need to take air into the lungs?

Explain in the simplest language, first, that pure air has something in it called oxygen without which we cannot live even for a few minutes, secondly, that as the blood goes through the body it takes up bits of worn-out material which would soon make us very ill if they could not be sent out of the body, and, thirdly, that the blood must exchange these poisonous particles for oxygen. In other words the impurities in the blood must be cleansed out of it, washed out, as it were, by the pure air we breathe into the lungs. Let us see how this is done.

Again using the glove, which should have a worn (but not open) finger-end, place the worn finger-end in water and blow in the glove to illustrate how the water gets to the air inside through the thin place. Explain that the lungs

are full of places so thin that the blood, which the heart sends to the lungs to be cleansed, and the air, can come together in something the same way as the water and air do in the glove finger.

The blood must have fresh air to purify it and the only place it can get it is in the lungs. *Remember that the blood needs air even more than the body needs food, and we must have pure air to breathe in order to have good blood.*

LUNG CAPACITY

Which would hold more air, a large glove or a small one? a glove puffed full of air, or one partly full? In which could a soiled garment be washed cleaner, in a tub full of water or in one partly full? in clean or dirty water? Lead them to see that in like manner the more air they can breathe in and the fresher it is, the better the blood will be cleansed.

Call several children before the class and measure the breathing capacity of each placing the results on the blackboard. How could one increase the size and strength of his muscles? Explain to them that they can also increase the power of the lungs by proper exercises. Give the class a few simple breathing exercises pointing out how these if persisted in would develop the chest. Encourage each of them to measure his own breathing capacity often and see how much he can gain from time to time. Tie a cord loosely around the middle of the glove and again blowing it up, show how much less capacity it now has. Lead them to see that tight clothing squeezes the lungs so they cannot take in so much air and thus the blood can not be properly cleansed.

WHY FRESH AIR IS ALWAYS NEEDED

Suppose we have food irregularly, only once or twice a day, how would we feel? Lead the class to see that while one could live some days without food he would smother in a few minutes without air. Hence pure air is a greater necessity to the blood than food to the body.

How many hours in a day? How long do you sleep? How many hours in school? How many in the house when awake? Would spending four or five hours out of doors give the blood pure air enough? In which buildings do you stay most? (Homes, schoolhouses, churches.) In which room did you stay longest? Ask the children to suggest plans (which the teacher should supplement) for securing pure air indoors without drafts and be sure they see the especial need of careful ventilation in bedrooms, because they stay there longer than in any other room.

To illustrate how rapidly the air becomes impure and the necessity of changing it often, es.

pecially when there are a number of persons in a room, provide a large-mouthed bottle nearly full of clear water. Represent the impurities of each child's breath by a drop of black ink. Drop one drop in the water and shake the bottle. Point out that even so the breath of one person makes the air impure unless there is fresh air coming in. Continue to add ink to the water, one drop at a time, until a number have been added. Lead the children to see that the larger the number of people in a room, the greater the need of changing the air often.

If two short lengths of small rubber tubing are available, they may be arranged to illustrate ventilation by using them as siphons, the one bringing clear water into the inky fluid as the other takes it out.

EFFECTS OF ALCOHOL AND TOBACCO.

The children have already seen how bad air hinders the lungs from properly purifying the blood. Now speak of the things that may prove more dangerous. Explain that when alcoholic liquors are drunk, the blood carries some of the alcohol to the lungs and it may irritate the delicate air cells so that they cannot do their work well, and prevent one from being strong and healthy.

Tell them of the poisonous gasses that come from tobacco when it is smoked and that when a boy smokes cigarettes and inhales the smoke the hot biting fumes coming directly in contact with sensitive air sacs not only injure them so they cannot do their work well but poison the blood itself and thus, like alcoholic drinks, often brings on lung troubles.

The use of tobacco is likely to cause or to increase the tendency to catarrh.—PROF. W. S. HALL, Ph. D., M. D.

Alcohol, by its power of weakening the lungs, is a frequent cause of consumption.—M. LEGENDRE, M. D., Paris, in *Lancet*.

The use of alcohol weakens the lungs and makes one more liable to lung diseases than he would be if he abstained from it.—PROF. WINFIELD S. HALL, Ph. D., M. D. (Leipsic.)

THE DISCONTENTED LITTLE BOY

A FAIRY TALE

ONCE there was a little boy named Arthur who had a round, well-shaped head, strong arms that could throw a ball, drive a pony, bring in wood for the fire, and do all things a boy likes to do. He had hands and fingers that served him well. His legs and feet took him wherever he wished to go. They ran races, jumped, and helped him when he played games.

Strange to say, this boy thought he would like a different body. So one day he went to a fairy who lived in a wood and said, "Good fairy, I do not like the kind of arms I have. I would like wings like a bird. Will you give them to me?"

"Are you quite sure you want wings?" said the fairy. "Yes, sure," said the boy. "I think", said the fairy, "that I will give you wings to try a few days. If you find you do not like them, come back to me in three days and I will give you back your arms."

She touched the boy with her wand and wings took the place of his arms. Arthur was greatly delighted and immediately flew into a small tree. He had thought he could fly to the top of a tall tree, but he found his legs were too heavy for that.

All day long he amused himself by flying hither and thither and at night flew home, thinking to surprise his mother and father and his brothers and sisters. They were indeed surprised, but not at all pleased to see him so changed.

When supper time came the boy found he could not feed himself, and I don't know what he would have done if his good mother had not taken pity on him and fed him.

The next day, and the next, he moped about the house, not caring to go out. At nightfall he went to the wood and said to the fairy, "I have changed my mind. I would like my arms back again."

When the fairy touched him with her wand and his arms were restored you can imagine how joyfully Arthur ran back home.

You would suppose this lesson would have been all he needed but it was not long before he grew discontented again.

One day he was walking in the wood and saw



"The green earth sends her incense up
From many a mountain shrine."

a squirrel running swiftly up a tree. "Oh" thought he, "what fun it would be to have feet like a squirrel instead of my arms and legs. I could live in a tree, then."

Away he went to the fairy "Please kind fairy give me legs and sharp claws like the squirrel," he said."

"You shall have them, but only to try" said the fairy. "Come back in three days if you do not like squirrel legs and claws."

As soon as the boy got his new legs he ran up a nut tree and tried to scamper over the branches as he had seen the squirrels do; but his body was so heavy that he could not run very fast. At night he went home and sat down to supper. He soon found he could not use a knife and fork, and again his mother had to feed him.

The next two days he kept out of sight, staying in the woods most of the time. In three days he was glad to go the fairy and receive back his arms.

When he got home again, his mother said, "Now I trust my boy is satisfied to be like other boys." "Oh, yes, mother, I am sure I am," said Arthur.

But one morning he got up rather late and had to hurry to be in time for breakfast. "Dear me," he thought, "Why can't I have clothes that I do not need to take off and put on. The sheep do not need to take off their clothes every night and then have the trouble of putting them on again in the morning."

After breakfast away he ran to the wood, found the fairy, and said, "Oh, fairy, you must make one more change for me. I am sure I shall like it. I want to be covered with wool like the sheep."

The fairy knew he would not find sheep's wool comfortable, but she waved her wand and there stood the queerest looking boy you ever saw. Instead of his pretty blue sailor suit and red stockings he was covered from head to foot with white wool. The fairy did not change his shoes.

He ran home and found the family just ready to sit down to supper. "See," he said, no more dressing and undressing for me. How I pity you Jamie and Kate. I can play while you have to stay indoors and dress." No one said anything and the boy sat down to eat his supper. Pretty soon he felt so warm he did not know what to do. He could not take off his wool covering, and had to stay out of doors until bedtime.

He slept very little that night and for three days you never saw a more unhappy, uncomfortable little boy. When he went back to the fairy she touched him again with her wand. The wool fell off and back came his sailor suit and red stockings.

"Now," said the fairy, "do not be a foolish boy again. You should be satisfied with the body you have."

"I can see that you have kept your skin clean, you have always brushed your teeth, your nails are clean. Your fingers are not stained with cigarettes and you look as if you had eaten wholesome food."

"You have the kind of body you need for your work and play. Run home, and don't come to me again."

I am quite sure the boy was contented after that.

NOTE TO TEACHER

The above story may be used by first or second grade teachers in developing a lesson on the parts of the body.



THE WISDOM OF FOLLY

BY ELLEN THORNEYCROFT FOWLER

THE cynics say that every rose
Is guarded by a thorn which grows
To spoil our posies:
But I no pleasure therefore lack;
I keep my hands behind my back
When smelling roses.

'Tis proved that Sodom's apple tarts
Have ashes as component parts
For those that steal them:
My soul no disillusion seeks;
I love my apples' rosy cheeks,
But never peel them.

Though outwardly a gloomy shroud,
The inner half of every cloud
Is bright and shining:
I therefore turn my clouds about
And always wear them inside out
To show the lining.

Our idol's feet are made of clay;
So stony-hearted critics say
With scornful mockings:
My images are deified
Because I keep them well supplied
With shoes and stockings.

My *modus operandi* this—
To take no heed of what's amiss;
And not a bad one:
Because, as Shakespeare used to say,
A merry heart goes twice the way
That tires a sad one.

Congregationalist.

School Physiology Journal

COPYRIGHT APPLIED FOR

Single Subscription.....\$0.50 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, ACTING EDITOR

EDITH M. WILLS, Assistant Editor

Published monthly at 23 Trull St., Boston, Mass.

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"Fie upon thee, November! thou dost ape
The airs of thy young sisters . . . thou hast stolen
The witching smiles of May to grace thy lip,
And April's rare capricious loveliness
Thou'rd trying to put on!"

A SPECIALTY IN EDUCATION

There is one means of educating our children to which due prominence has not been given. The object lesson is an important pedagogical method. Accordingly, our cities have generously hastened to provide such lessons not only within the schoolroom but beside the very streets along which the children trudge at least four times daily to and from the school proper. With gay colored pictures in more than life size, in letters so large that he who races may read, our children are taught that —'s Beer is "A Treasure in Illness, a Pleasure in Health;" that —'s Ale is "Pure, Healthful, Refreshing, Enjoyable;" that —'s is the ale of Nova Anglia, and, to reinforce the point, Uncle Sam is represented as pointing to this drink the unsophistical but easily recognizable English, Irish, German, Polish, Russian, and even Chinese immigrant. An honored type of early American settlers stands on high holding a glass of —'s whiskey.

Specific teaching is also given as to the value of certain brands of tobacco and cigars.

Twenty times a week at least the children in many parts of our cities have these facts definitely thrust upon them, yet we are sometimes told that our laws requiring the equivalent of only six or eight temperance lessons a year ask for too much temperance teaching, and that our instruction must be incidental, that it teaches children about matters of which they know nothing, etc. Such arguments are but pitiable excuses in the face of hard facts which anyone can confirm if he will but keep his eyes open.

The city that allows miles of these object lessons placed before the eyes of its children

and then fails to provide time and place in the course of study, and helps for teacher and pupil for adequate instruction as to the danger in using alcoholic drinks and tobacco is blindly undermining its own foundation.

A SUGGESTION HAVING TWO GOOD FEET

THE *American Magazine* for September contains a good article by Julian Willard Holburn on "Can we keep sober?" It shows clearly the fate that sooner or later overtakes the steady, moderate drinker, the average limit of his power of resistance, the fallacy that he can escape by using malt liquors. It corrects the false doctrine that alcohol can weed out from the race the unfit while it is constantly breeding them afresh.

At the close of the article the writer modestly makes a suggestion, which he admits is no panacea, for the prevention of chronic inebriety. It is:—"If a man abstains from alcohol until he is twenty-five, he is in little danger, whatever his nervous temperament, of becoming a chronic inebriate."

The writer frankly says that this suggestion has only one leg to stand upon but he thinks it is the only suggestion that has any leg at all.

It does seem cruel to attack such a crippled suggestion; but the very weakness of that one leg invites the missile,—*How would you get the man to abstain?*

By what argument would you induce the youth or young man, arrived at the hour when temptation thickens around him, to set himself against the drinking customs of his associates and say to them, "I am not yet twenty-five.—I dare not drink until I am. It might hurt me."

For what is the real essence of the argument you must use to get your man to abstain until he is twenty-five? Simply this—Here is a poison so powerful that your body is not strong enough to resist it until you have attained the full strength of manhood. It will not do you any good then, and may even harm you, and all your posterity; but if you will be brave enough to stand out against custom until then, your risk will not be so great. Surely it would be a one-legged suggestion for any boy who has red blood in his veins.

But tell the youth—and begin while he is a boy—the real nature of this substance, show him its power to master judgment, reason, self-control. Point out to him that its use grew into custom while people were ignorant of its nature; and *then* appeal to all that is brave and manly in him to stand up against that custom, born of ignorance and delusion, to oppose it always and

everywhere, as he would an armed foe marching into his country. For what else is it but a foe?

Eight thousand cases of inebriety treated in one hospital in New York in one year! So the writer in the *American Magazine* tells us. One-fourth of all the cases entered! Multiply that by the number of hospitals in the country, or add, if the proportions differ, and show the boy the figures. Compare them with the numbers in Grant's and Sherman's armies. Ask him if he has not the courage to stand up against a custom that rides down with Juggernaut ruthlessness, such an army of his fellow-countrymen every year.

Disabuse his mind of the idea that it is only the weaklings who go down before this custom. Everyone can point to instances where it took the best.

In these days, when high ideals of physical and moral manhood are at the front, don't offer the boy a one-legged suggestion to measure himself up to. Give him one that can stand straight and sound on two legs, and that is:—"Alcohol is a social poison. I will none of it."

A NICKEL'S WORTH OF BEER

BY EMMA L. TRANSEAU

THE current beer advertisement is usually a more or less modified version of an old German proverb that "Where there is a brewery, no bakery is needed." The true significance of the proverb was illustrated when a woman took a covered dish to her husband in the saloon one noon and he, supposing it contained his dinner, invited his companions to come and have some. When they uncovered the dish they found nothing but a note saying, "I trust you will enjoy your dinner. It is all we have at home." There is indeed small demand for the baker's goods where the brewer gets all the money.

That beer is "liquid bread," is another favorite epigram of the maltster. A London saloon keeper once posted this claim on his sign and was arrested and made to pay a fine for obtaining money on false pretenses, because his beer when analyzed was found to contain but a mere trace of anything that could be called nourishing.

According to the standard works of chemists:

A Nickel's Worth of Bread furnishes	A Nickel's Worth of Beer yields
6.4 ounces water	8.9 ounces of water
11.2 ounces fuel food (starches and sugars)	.5 of an oz. malt extract
2. ounces muscle building food (albuminoids)	mostly ash, with incom- putable traces of carbohy- drates gums and al- buminoids that have es- caped fermen- tation and fil- tration.
.2 ounces fat (fuel food)	
.2 ounces mineral matter	.015 of an oz. of carbon di- oxide
No poison	.5 of an oz. of narcotic poison, alcohol

This contrast shows what a gigantic swindle it is to call beer "liquid bread:" thirteen and one-half ounces of solid food substance over against five-tenths of an ounce of questionable food material dissolved in about nine ounces of water and poisoned by half an ounce of alcohol.

A GLASS OF BEER COSTS MORE THAN A NICKEL

It costs, very often, a man's resolutions. The following case quoted from German student life shows the practical working: A student is preparing for his examinations in his room in the evening. He feels thirsty and says, "I will just go and get a glass of beer, then come right back and go to work." He goes, meets his friends, and after one glass, is easily persuaded to take another. His resolution, dulled by the first glass, weakened by the second, is shattered by the third, and he stays and spends the evening in more drink and silly talk.¹

A single instance of this kind would not be so serious in itself were it not indicative of the way in which the continued, so-called moderate use of beer or other light liquors insidiously undermines the self control of the drinker until his appetite often becomes uncontrollable.

Beer costs a man extra pay which he might otherwise have commanded by steady improvement in his working ability. A man, taking no alcohol, performs for a few days, some measurable kind of work, such as adding, memorizing, or type-setting. With practice his record increases for several days. Then he begins to take every day, what is usually considered a moderate quantity of beer, or other alcoholic liquor. His record soon ceases to rise, and instead, begins to fall until it is below the starting point. Thus his drink not only annihilates the improvement that might be gained from practice, but actually reduces his normal output of work. Such is the proved result of very careful experimentation.²

Beer has to be paid for in health. The beer seller points to his patron's rosy cheeks and plump figure as signs that his drink is healthful. The physician reads those signs differently,—enlarged blood vessels, impaired circulation, "fatty heart," "fatty liver," or other serious troubles that will eventually manifest themselves.³

The drinker, who is unacquainted with the meaning of these signs, and is fond of his drink, may plod along at his usual tasks for a number of years boasting of his health and advertising his favorite brand of beer. But let him take up a new business, increase his usual amount of work, undergo unusual hardship, or enter into some physical contest with an abstainer, other conditions being the same, and his panting breath, palpitating heart, and poor accomplishment will tell a far different story.⁴

Thus the nickel's worth of beer taken with any degree of regularity, costs the drinker his self-mastery and earning capacity, and places a mortgage on health and life itself, directly proportionate to the degree of his indulgence.

¹ Prof. Cramer, M. D. of Gottingen.

² Prof. Emil Kraepelin of Berlin.

³ Prof. Weichselbaum of Vienna.

⁴ Prof. Max Gruber of Munich.

CHAPTERS IN THE BEER DRINKER'S BIOGRAPHY

BY EMMA L. TRANSEAU

THE biography of a beer drinker might be written under the following heads:

The false friends who deceive him. These are:

(a) The "hail-fellow" who urges him to take a "harmless" glass for sociability's sake, which really means that he make himself silly for the amusement of others.

(b) The untrustworthy adviser who says, "Take just a glass or two and then stop," when that amount is often sufficient to weaken self-control so that he does not stop.

(c) The self-interested beer seller who says beer contains only a little alcohol and considerable nourishment, although to get sufficient nourishment to satisfy a robin the man must take enough alcohol to cloud his mental faculties⁶.

The tasks that are too much for him. If he is a soldier the beer drinker is the first to drop out on a march; if a sportsman he falls behind his abstaining competitor; if a workman, his employer discriminates against him.

The strains he cannot endure. More than his usual amount of work, physical exertion, or hardship shows the unreliability of his boasted health.

The diseases he cannot resist. "Pneumonia, pleurisy and fevers seem to have a mortgage upon him which they foreclose at the first opportunity."⁷

The diseases he gradually contracts. "Beer-heart" may strike him in the prime of life. It is said to cause the death of every sixteenth man in Munich, the metropolis of Bavarian beer. "It is preeminently among beer drinkers that diseases of the heart and blood vessels, liver and kidneys occur."⁸

His mental weakening. "The beer mug is the enemy of genius." Two quarts of beer a day for a number of days reduces ability to do mental work 25 per cent. In such tests abstainers show no greater loss of efficiency than

habitues.⁹ As his work grows poorer, his conviction that beer helps him grows stronger. Evidence will scarcely dispel this illusion.

His Moral Deterioration. The beer-drinking customs of the German university students often transform well brought up young men into petty criminals, the constant annoyance of the police. Beer can make a man as drunk as whiskey and far more dangerous. The man who is drunk on beer will commit assault without excuse.¹⁰

His Time Limit. Life insurance experts figure for a young man 20 years of age who does not drink, forty years more of life; for the beer drinker, twenty years. That is, the beer drinker's average life limit is placed at the age of forty instead of at sixty, death in the prime of life instead of at the age of ripened life experiences. This does not mean that the beer drinker has gotten more pleasure out of his shorter life. "Society where alcohol is not used is much happier and more cultivated in tone than that in which beer, wine, and brandy reign."¹¹ "In place of the stupidity that shows itself amid beer fumes and on the morning after, will come a richer, higher and purer enjoyment . . . without rowdyism and without remorse."¹²

His Trail upon the Race. In Bohemia, where beer is so plenty and so "good" (?) that some of the city fathers of Prague thought no drinking water was needed, is to be found startling evidence against the supposed "harmlessness" of beer. "Among the children of drinkers, cases of hysteria, epilepsy, hysterio-epilepsy, and even syringomyelia—a disease of the spinal cord) are remarkably frequent. In three districts, cretins (deformed and helpless idiots) were found as issue of the marriage of notorious drinkers and in nine districts idiocy of the children is connected with alcoholism of the parents or fathers, as the case may be. One couple, both of whom were drinkers, had five children mentally diseased, and another couple, two epileptic children."¹³

It is true, the strain or family terminals just mentioned, are extreme cases, but between them and the slightly injured are all degrees of variation, so that instead of purifying the race by exterminating the undesirables, drink breeds undesirables who increase the mediocrity of the race.¹⁴

⁶ Dr. August Forel, M. D., Ph. D., L. L. D.

⁷ Dr. S. H. Bergan, of Toledo.

⁸ Prof. Weleminsky, M. D., of Prague.

⁹ Prof. Wlassak, M. D., of Vienna.

¹⁰ Belgium Medical Temperance Society.

¹¹ Prof. J. Bergman, Ph. D., of Stockholm.

¹² Prof. Kraepelin of Munich.

¹³ Prof. Weleminsky.

¹⁴ Prof. Forel.



Grammar Lessons

FOURTH OR
FIFTH YEAR

HOW FERMENTATION CHANGES GOOD FOODS INTO UNSAFE DRINKS

IT is always rather difficult for children to understand why cider, wine and beer made from good fruits and grain are not wholesome drinks. A knowledge of how fermentation changes these natural food substances is essential, and it will be most effective if given at this time of year when there is unusual temptation to drink cider and wine.

The special points to be brought out are:

1. Fermentation changes the sugar of good fruit and grain juices to a gas, and a poison called alcohol.
2. Beer is neither "liquid bread" nor a harmless drink.
3. The use of all drinks containing alcohol is dangerous because, being a narcotic poison it is both harmful to the body and liable to create a craving for itself which may become uncontrollable.

Preparations for developing this topic (in two or more lessons) should be made several days beforehand. Procure a small quantity of barley seeds, some sweet apples and some grapes. Plant (or put in water in a warm place) sufficient barley corns to supply each member of the class with a sprouted seed when the lesson is presented. Pictures of yeast plants will also add to the interest.

Grate some apples and separate the juice from the pulp by squeezing it through cheese cloth. Heat part of this juice to the boiling-point and seal it air-tight in a bottle or jar. Place the rest in a large-mouthed bottle and set by to ferment. If convenient prepare two bottles of grape juice, sealing one and leaving the other open.

HOW FERMENTATION CHANGES FRUIT JUICES

Take into class a sweet apple and some sweet grapes. Allow each child to eat one of the grapes and a small piece of apple. What is the taste of each? of blackberries? Mention

some other fruits which have a sweet taste. Point out that even the fruits like cherries and currants which taste sour contain some sugar. All are good healthful foods.

What coverings have all these fruits? What happens if the skins become broken? Show a broken grape with mold and an apple which has begun to decay. What happens to sweet apple or grape juice if it remains exposed to the air? What appearance has such juice? Can jellies be made from fruit juices that have "worked"? (If they can not tell let them ask their mothers at home.) Lead the class to see that the fermented fruit juice is changed else it could be used for jelly as well as when fresh. The "working" is a process of decay which makes the juice unfit for jelly or a wholesome drink, as rotting makes the apple unfit for food. Let us see what causes this change?

Now show the sealed bottles of apple and grape juice, and the unsealed ones which have "worked," or fermented and let the class compare the latter with the former, noting especially the bubbles of gas which show that the sugar is being broken up. Show also a piece of mouldy bread, an apple and some grapes upon which the dust remains.

How many have noticed the dust floating in a room when a ray of sunshine revealed it? Call attention to the mold on the bread and the dust on the fruit. By questioning them as to the text of their books and by explanations as needed, make it clear to the class that the dust always floating in the air, contains among other things, many tiny germs and yeast plants which are alive and capable, under right conditions, of growing and multiplying very rapidly. Some of these germs produce the mold upon bread. Is mouldy bread good food? Would the bread become mouldy if it could have been sealed in an air-tight can as soon as it was taken from the oven? The fruit merchants think their apples keep better if rubbed free from dust. What is the reason?

Other little germs like the yeast plants must have moisture in which to multiply, and sugar to feed upon. What sort of juices would furnish them good places for growth? Show a good apple and a decayed one. Ask the class to compare the two, noting that although the rotten one has the same shape, inside it is entirely changed and is now unfit for food. Again compare the fermented with the unfermented juices and bring out the point that the tiny yeast plants acting upon the sugar of the fruit juices have made greater changes in the juice than are shown by the bubbles of gas, for a poison named alcohol has been formed. The cider and wine as these liquids are now called, are unsafe drinks. This change may begin within

six hours and the longer the cider or wine ferments the less sugar and the more alcohol there is, until at last there is another change, and the alcohol changes to an acid, vinegar.

Why does not the juice in the sealed jars "work"? the canned fruit which is put up at home? When one of these cans of fruit does spoil what is the reason? Lead the class to see that boiling kills the yeast plants that may have fallen into the juice and no more can get in if the liquid is put up boiling hot and sealed air tight. After a can of fruit is opened, will it ferment? Why?

Be sure that all clearly understand that whenever moderately sweet liquids are exposed to the air, yeast plants get in and, breaking up the sugar form alcohol. Hence, home-made wines contain alcohol, although none has been put in, and are unsafe drinks.

Show heads of barley and wheat, and pictures of grain fields if they can be obtained, and discuss the value of cereals as food. How many eat pearl barley? How many know of the nourishing gruel made from ground barley often given the sick?

Provide each child with a fresh barley seed and one that has been sprouted. Cut some of each open for inspection and let the class compare the appearance of the two. Let each child chew a fresh seed and then a sprouted one and draw from them that sprouting the seeds changes the starch to sugar.

Explain how the brewer, wishing to make beer, takes advantage of this sprouting process to get a sweet liquid from the barley. His plan is to sprout large quantities of this grain, to kill the sprouts by scorching, to add bitter extracts, large volumes of water, and yeast, made up of quantities of yeast plants, which makes the liquid "work." or ferment. The yeast plants floating in the air would cause it to ferment but he thinks it is a surer and better way to add yeast of the sort he wishes to use.

Refer to the change in the sugar of the apple and grape juices and lead the class to see that in the same way the yeast plants in the

sweet juice from the sprouted barley would break up the sugar into gas and the poison, alcohol. What was a nourishing food has been changed into an unsafe drink called beer. Point out that no matter how pure (that is, free from adulteration) beer may be, it is, a dangerous drink because like the cider and wine it contains alcohol.

Emphasize the fact that home-made root and sap beers also contain alcohol as shown by the slight tangy taste and the bubbles of gas.

IS BEER A FOOD?

Mention some good foods. If children eat foods like cereals, eggs, vegetables and bread, what will probably be the result in body and mind? Suppose one had some very good oatmeal but that the milk poured over it contained a little poison like paris green or carbolic acid; would we then call this combination good food? Show that a food must not only nourish the body but be free from any poisonous substances that might harm it. Beer is not a food because even the small amount of nourishment it may contain is poisoned by alcohol.

What is the purpose of taking food? From the various answers sure to be given, bring out the point that we do not eat simply to keep alive, as the lower orders of creatures do, but in order to gain the strength of brain and muscle that will enable us to achieve worthy successes.

Beer tends to befog the mind and lessen the ac-

tivities of the body, thus defeating to a greater or less extent, the very purpose for which food is taken.

Show the fallacy of the "beer a liquid bread" idea by comparing bread and beer. (The article on beer, page 42 will furnish suggestive supplementary material on this point.)

Why do people often call bread the "staff of life"? How many slices of bread in a five-cent loaf? If the loaf had ten slices how many could each member of a family of five have? What would each person's two slices cost? What does a drink of beer cost? (Show that it is consumed by one person.)



"And children know,
Instinctive taught, the friend and foe."

One five-cent loaf would usually furnish all the bread one person would eat in a day.

Point out the wastefulness of buying beer when every drink costs enough to pay for a day's supply of bread for one person and yields to the drinker only the merest trifle of food and that poisoned by alcohol.

NATURE OF ALCOHOL

Having developed the point that cider, wine and beer contain alcohol and are therefore unsafe drinks, teach carefully the nature of that narcotic poison:

First, that since it is the nature of alcohol always to injure the body it is certainly a poison. To illustrate this point plant grains of wheat or corn in three small pots of earth. Wet the plants in the first with water. For moistening the plants in the second and third have two bottles (each marked with the regular skull and cross-bones label for poisons) one of which contains a weak, the other a strong solution of alcohol. Moisten all plants daily and let the children compare the results.

Second, drinks containing alcohol are dangerous because it is the nature of this narcotic poison, even when diluted greatly as in cider, wine and beer, to break down the drinker's self-control and to create a craving for these drinks which often becomes uncontrollable.

Third, since alcoholic drinks have destroyed very many strong and educated people as well as weak and simple ones, the only safe course is to avoid forming the habit by refusing to drink even a little.

Beer is a far more dangerous enemy to Germany than all the armies of France.—VON MOLTKE.

The habitual beer drinker is an alcoholic just as well as the habitual brandy drinker.—PROF. C. BINZ, OF BONN.

Naturally the lighter alcoholic drinks such as cider, beer, and light wines, cultivate a taste for the stronger liquors and ardent spirits.—PROF. MEYER, University of Gottenburg.

A pint of beer contains just as much alcohol as 1-8 of a pint of whiskey; whether a person drinks beverages containing 4 or 40 per cent alcohol does not matter, for he drinks of the first 10 times as much as he would of the second.—J. PETERSEN in *Die Enthaltssamkeit* (1903.)

In order to secure for the people better, cheaper food, the use of beer must be energetically fought against. Through the brewing of beer, nutritive substances are spoiled and living made expensive.—DR. H. BLOCHER, *Monatsschrift* (1902.)

T. Laitinien concluded from his researches on this subject that alcohol lessens the alkalinity of the blood, lowers its bactericidal powers, and diminishes the number of the white corpuscles.—*La Presse Med.*, (1902.)

A. S. B., New Jersey. Our city superintendent of schools indorses the JOURNAL thoroughly and has this year influenced the Board of Education to furnish it free to all principals of schools.

If the JOURNAL comes to you regularly and you have not ordered it, it is being sent to you through the courtesy of some friend who wishes to provide you with its help in your school work. All subscriptions, if not renewed, are discontinued as soon as they expire.

ALREADY PROVIDED FOR

A Duluth pastor makes it a point to welcome any strangers cordially, and one evening after the completion of the service, he hurried down the aisle to station himself at the door.

A Swedish girl was one of the strangers in the congregation. She is employed as a domestic in one of the fashionable homes, and the minister, noting that she was a stranger, stretched out his hand.

He welcomed her to the church, and expressed the hope that she would be a regular attendant. Finally he said that if she would be at home some evening during the week he would call.

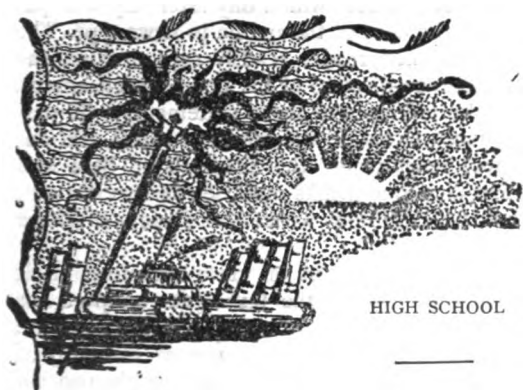
"T'ank you," she murmured bashfully, "but ay have a fella."

Three of the members of the congregation heard the conversation, and in spite of the fact that their pastor swore them to secrecy, one of them "leaked."—*Christian Endeavor World*.

VICTORY IN DISGUISE

"The sun will shine and the clouds will lift;
The snow will melt, though high it drift;
Across the ocean there is a shore;
Must we learn the lesson o'er and o'er?"

"To know there is a sun when the clouds droop low,
To believe in the violets under the snow,
To watch on the bows for the land that will rise,—
This is victory in disguise."



EFFECTS OF ALCOHOL ON THE CIRCULATORY SYSTEM

THE most important organ, however, is the heart and it is deplorable that physicians yet cling to the idea that alcohol is a heart stimulant. And yet we have the most complete and exhaustive investigations from which to judge of the influence of alcohol upon the heart as well as upon the pulse, the blood pressure, the innervation of the small vessels and also upon the viscosity of the blood. Concerning the pulse rate in healthy men, we have a series of investigations which show that if a subject remains in the same condition while taking the alcohol no change in the pulse takes place. Moreover, as to influencing the pulse with alcohol it is characteristic that any kind of irritation is answered by a change in the pulse rate, and this an increase. According to clinical conceptions increased pulse rate in a pathological heart betrays nothing but a weakening in the performance of the individual movements, which must be compensated by an increase in the number of strokes.

Information concerning the power of the heart is obtained from the height of the blood pressure. I have myself made blood pressure investigations. The invariable result was that no perceptible difference would be obtained with ordinary doses and nothing over 10 per cent with very large doses. Of course, with fatal or nearly fatal amounts the blood pressure fell. Kochmann, in a recent work, proves that alcohol causes no increase in blood pressure in the isolated mammalian heart, and that alcohol has no noteworthy influence of any kind upon blood pressure. Mellen has also found only very brief and slight changes either in small or the large circulation.

A third factor which may enter into the question of the influence of alcohol is the condition of the innervation of the small blood vessels. That alcohol exerts no influence upon the vessels themselves has been proved by Robert Passler, Harnack and Kochmann.

A rarely important factor in the proportion of the circulation is the viscosity of the blood. If with the heart power remaining the same, the blood is made more fluid, less viscous from any cause, if its internal friction is reduced, that would be of importance in promoting the circulation. But any increase in the viscosity means a serious obstruction to the work of the heart. We learn something about the influence of alcohol upon the internal friction of the blood from a research Burton-Opitz, the result of which showed that:

Whether alcohol is introduced by way of the stomach, duodenum, or by injection into the veins it increases the internal friction of the blood.

Here we have finally all the unfavorable influences which alcohol exerts upon the circulation; it acts unfavorably, or not at all, upon the pulse rate, it acts very temporarily and in small measure, or not at all, upon the blood pressure, it does not affect the innervation of the blood vessels, it increases the internal friction of the blood. We have, therefore, in all these quite enough particulars for forming the general judgment that alcohol is an injury to the circulation.

—DR. GEORGE ROSENFELD, (1906).

ALCOHOL CAUSES FATTY DEGENERATION

A surplus deposit of fat can become dangerous when it takes the form of the fatty heart, fatty infiltration or fatty degeneration of the heart. Difficult breathing, diminished ability for physical exertion are the chief indications. Sudden stopping of the heart's activity or heart's stroke may unexpectedly take place. Even moderate drinking brings about premature old age.—DR. MATTHAEI, Germany.

REDUCES THE WORKING POWER OF THE HEART

Dr. E. Destree clearly demonstrates that the total work product of a muscle is greater without alcohol. This serves to explain why alcohol inebriates bear pneumonia so badly. The prognosis depends on the ability of the right heart to do its greatly increased work until resolution sets in. The right heart is the portal through which death enters, and its entrance is invited by a heart muscle weakened by alcohol.—PROF. GEORGE W. WEBSTER, M. D., Chicago.

LOWERS THE BACTERICIDAL POWER OF BLOOD

Sims Woodhead asserts that alcohol diminishes the alkalinity of the blood, and hence decreases its bactericidal power. "Alcohol lessens the scavenging power of leucocytes; under its influence they lose their capacity for absorbing poisons and producing antitoxin; they fail to ward off organisms from the general circulation." —PEARCE GOULD, M. S., M. D., F. R. C. S

(Continued from page 37)

Foreign observers ascribe the sobriety of the American workman and the demand for it by American employers to the general enlightenment of the people through obligatory temperance education.

There is a growing healthy sentiment in the public press on the subject of abstinence. Daily papers are commenting editorially on temperance progress, and are even giving editorial space to scientific temperance facts that might well have been quoted from our indorsed school physiologies.

THE BREWERS' TEMPERANCE EDUCATION

Even our friends, the enemy, say in the *Brewers' Journal* that "the temperance question can only be solved by education," but elsewhere in the same number they enlighten us as to what they propose to teach in what they frankly call "the brewers' campaign of education." Listen to what they say:

"When you advertise your product in your local papers, fill empty spaces with some such sayings as these: Beer is as much a pre-digested food as the so-called breakfast foods. The process of malting the grain is the same in both. It converts the starchy matter of the cereal into malt sugar which is very assimilable and digestible and also very nutritious."

"The water which you drink may contain germs of typhoid fever, the milk which the dairyman sells you may contain the germs of tuberculosis, but your beer has been cooked and boiled sufficiently to kill every germ in it. As to purity, beer is more reliable than either water or milk."

"Of all drinks beer is the most pure and wholesome. Purity is absolutely essential to proper fermentation without which beer would not be palatable. The bitter of hops is an excellent tonic and the malt sugar of barley is a high food quality."

This is the meaning of those smoothly-worded

laudations of beer which day after day are put before the eyes of the public in news type. The well informed reader readily sees through the temperance disguise of the beer advertisement. Yet the influence of these statements will persist more or less in the minds of many, and our school teaching of the facts about beer and other alcoholic drinks must be equally clear-cut, showing definitely where the fallacy of these claims lies.

From every point of view, therefore, it is necessary to watch the text-books adopted for the use in the schools, to see to it that none are introduced which treat this matter evasively at vital points. A book that describes the process of fermentation and in that connection can only say about fermented drinks as such that "there is nothing in them that makes them necessary

to any person in sound health and that the boy or girl who wishes to be as vigorous, as useful, and as successful as possible should let them alone"—or a book that merely describes the process of fermentation and comments on the harmfulness of the *flavoring matters* which beer contains but does not state that beer is dangerous because of the *alcohol* it contains — such



Too slow, so freighted are the river-ways
With gold of elms and birches from the maze
Of forests."

books, although containing partial truths, fail right here to give the exact information that our people need to correct wrong ideas given them by the promulgators of the drink traffic.

THREE ESSENTIALS IN BOOKS

There are three points, therefore, at which the introduction of text-books should be guarded:

1. They should be scientifically accurate, free from errors of omission as well as of commission: they should not only teach the truth about alcohol itself, but there should be no evasion in teaching that beer, wine, cider and other alcoholic drinks are *dangerous because of the alcohol they contain*.

2. Text-books should be adapted to grade. It is useless to expect effective work to be done when the books are used in grades to which

*Courtesy of the Boston & Maine R. R.

they are not adapted, or when one or two books are supposed to meet the needs of all pupils from the primary grades to the high school.

WHAT TO DO

How shall we make this study increasingly effective?

The goal to be reached is the thorough hygienic and temperance instruction of every child of school age in the United States. Let the question, *How well is this ideal realized in my state, my city, my school?* be the measuring-rod of progress or success.

The first essential is personal familiarity with the subject. Get acquainted with its underlying principles, philosophy, and with its literature; study the text-books for the different grades.

Give special attention to the teaching in the lower grades. The children in these grades are in the pre-eminently habit-forming years. A large proportion of the children leave school in the early grammar grades. Unless they are taught hygienic and temperance truths before that time, the school will have neglected its opportunity; the child will have failed to receive the instruction which is his right under the law.

THE CALL FORWARD

It is said that Spain once held both sides of the Mediterranean at the Straits of Gibraltá. So highly did she value her possessions that she stamped on her coin the two pillars of Hercules and on a scroll thrown over them were these words, *Ne Plus Ultra*—"No more beyond." But one day a bold spirit sailed far beyond these pillars and found a new world of beauty. Then Spain wisely struck the word "*Ne*" from the coin and left "*Plus Ultra*"—*more beyond*.

To the men and women of America today comes this message: All is not done, the children are not all safe yet. We have but a glimpse of the rich possibilities in teaching them the truth that will make them strong

and free. There is "more beyond." Humbly proud of the past which is secure, grateful for the encouragement of the present, let us turn our faces to the light of the future and go forward in this work of education in the strength of intelligence, the courage of conviction that truth is omnipotent, and the serenity of faith in ultimate victory.

Cora F. Stoddard, Acting Secretary.

MORE THAN ENOUGH

"An eight-year old boy went to a church picnic, and, being a favorite with the ladies, had been liberally supplied with good things to eat. Later in the day one of the ladies noticed the boy sitting near a stream with a woebegone expression on his face and his hands clasped over his stomach.

"Why, what's the matter, Willie?" she kindly asked. "Haven't you had enough to eat?"

"Oh, yes'm," said the boy. "I've had enough. I feel as though I don't want all I've got."

THREE TO TWO

"SOME little girls were boasting of their respective families. They had passed from clothes to personal appearance and finally came to parental dignity. The minister's little girl boasted:

"Every package that comes for my papa is marked 'D. D.'"

"And every package that comes for my papa is marked 'M. D.'," retorted the daughter of the physician.

Then followed a look of contempt from the youngest of the party. "Huh!" she exclaimed. "Every package that comes to our house has three letters on it: 'C. O. D.'"—*Ladies' Home Journal*.

New Century Series of Anatomy, Physiology and Hygiene

Oral Lesson Book in Hygiene.....	\$1.00	Elementary Anatomy, Physiology and Hygiene	\$0.75
New Century Primer of Hygiene .....	.30	Anatomy, Physiology and Hygiene for High Schools	1.00
Intermediate Physiology and Hygiene..	.40		

THE NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject-matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high-school; and for the fullness and accuracy of the treatment in regard to the nature and effects of alcoholic drink and other narcotics on the human system. *Send for Descriptive Circular.*

AMERICAN BOOK COMPANY

NEW YORK

CINCINNATI

CHICAGO



DOES 40% SAVING INTEREST YOU

SCHOOL PHYSIOLOGY JOURNAL CLUB OFFERS

CLASS A		Regular price	CLASS B		Regular price
Woman's Home Companion	.	\$1.00	American Boy	.	1.00
Success	.	1.00	Everyday Housekeeping	.	1.00
Our Little Folks (new only)	.	1.00	Suburban Life	.	1.50
*Christian Endeavor World	.	1.00	Review of Reviews	.	3.00

*If this is selected add 10 cents.

OFFER

No. 1	School Physiology Journal and any one of Class A	\$1.10
No. 2	School Physiology Journal and any two of Class A	1.75
No. 3	School Physiology Journal and any three of Class A	2.40
No. 4	School Physiology Journal and either one of Class B	1.00
No. 5	School Physiology Journal and Suburban Life	1.50
No. 6	School Physiology Journal and Suburban Life and any one of Class A	1.75

MAGAZINES FOR THE WHOLE FAMILY

School Physiology Journal; Review of Reviews; Any 2 of Class A; Either 1 of Class B	\$3.75
School Physiology Journal; Review of Reviews; Suburban Life; Either 1 of Class B	3.00

More Combinations for the Asking.

SCHOOL PHYSIOLOGY JOURNAL, 23 TRULL ST., BOSTON

Anti-Cigarette helps.

Timely booklets on a timely topic. Teachers! Parents! Do you know what can be said against the tobacco habit? These pamphlets will tell you.

Power of the Tobacco Habit, \$.20. Boy and the Cigarette: \$.05. Tobacco; why the cigarette is specially harmful, \$.20. Cigarettes and Tobacco. \$.05.

SAMPLE: Samples of each, \$.40. Anti-Alcohol Helps, \$.10.

SCHOOL PHYSIOLOGY JOURNAL,

23 Trull Street, Boston, Massachusetts

**ARE YOU
A Primary-Kindergarten
Teacher?**



That is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the ONLY HOUSE IN THE U. S. putting up Kindergarten material especially for Primary Schools. If you will send for free catalogue now we will send you of charge instructions for using Kindergarten material in primary schools, the regular price being 25 cts. **FREE** Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.

INTERNATIONAL COURSE OF STUDY IN PHYSIOLOGY AND HYGIENE.

Widely used in America, and reprinted in England and sent by a committee of the British Medical Association to every local School Board in the United Kingdom with a plea for its adoption. This course of study plans for fresh topics in each grade. With its help the teacher can make Physiology and Hygiene the favorite study of the course.

Send 10c for an "Educator's Package" of literature containing sample and up-to-date leaflets.

SCHOOL PHYSIOLOGY JOURNAL,

23 Trull Street, Boston, Massachusetts.

AN ATTRACTIVE OFFER

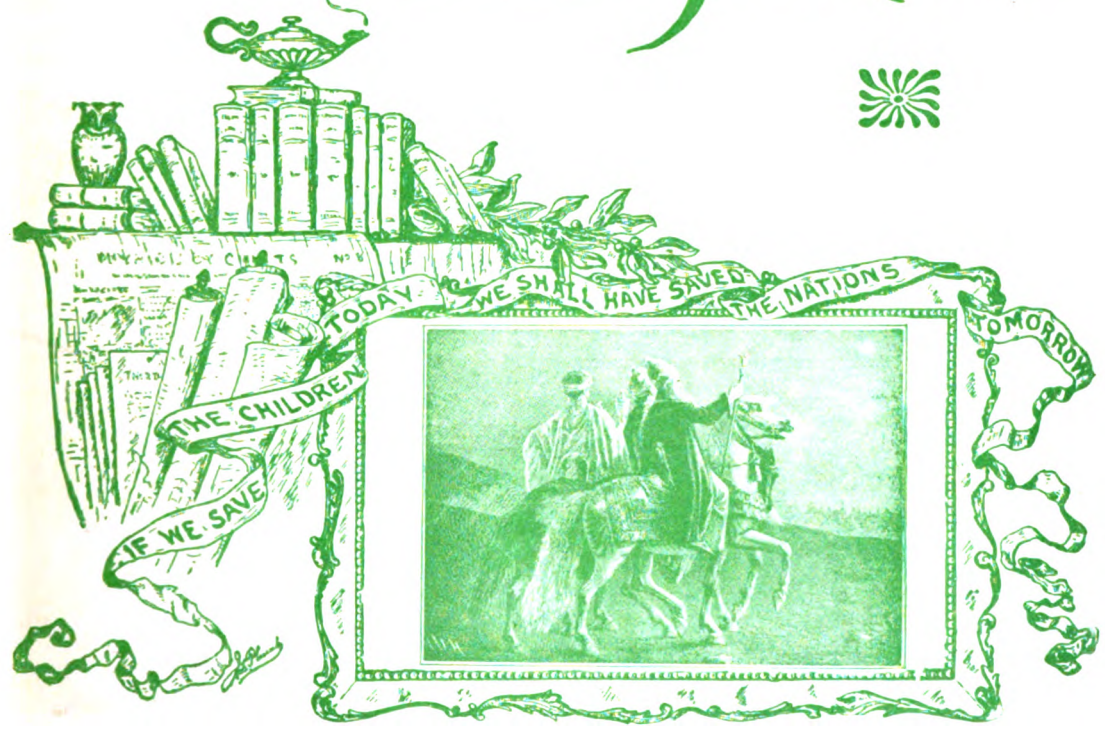
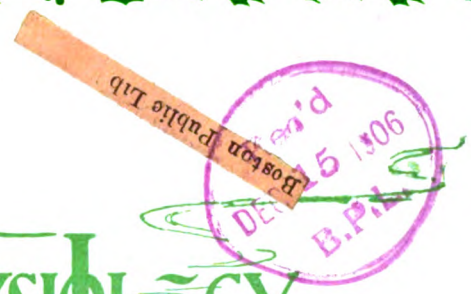
THE SCHOOL PHYSIOLOGY JOURNAL, (16th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00. Early subscribers get the September number with course of study for year. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET, BOSTON, MASS.



THE SCHOOL PHYSIOLOGY JOURNAL



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVI. NO. 4
DECEMBER, 1906



Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid to any address on request.

GINN & COMPANY Publishers

Boston

New York

Chicago

London

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.
\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

CONTENTS

	Page
The Value of Instruction Regarding Alcohol	40
The Spirit of Christmas	51
The Cell Builders	52
Scientific Temperance Instruction in Lower Grades	53
Primary Lessons—Third Year—Clothing the Body	54
Grammar Lesson—Fourth Year—Teeth and Digestion	56
Editorials	59
Use or Abuse	60
They Must Upward, Still, and Onward, Who Would Keep Abreast of Truth	62
High School Lesson—Respiratory System	63
Book Notices	64

THE SUFFOLK ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

234 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

THE SCHOOL PHYSIOLOGY JOURNAL, (16th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET, BOSTON, MASS.

Digitized by Google

School Physiology Journal

Vol. XVI.

BOSTON, DECEMBER 1906

No. 4

December

"Hail to the month when the yule-log is burning!
Hail to December, glad month of the year!
Hail to the time when our hearts are all learning
To love one another and be of good cheer.
Welcome the mistletoe, laurel and holly,
And welcome the snow-flakes and sleigh-bells so gay
Away with all tears and all dark melancholy!
Prepare to enjoy the most glad holiday."

THE VALUE OF INSTRUCTION REGARDING ALCOHOL

BY WINFIELD S. HALL, PH. D., M. D.

Professor of Physiology, Northwestern University Medical School, Chicago

THERE is not today a more important question for educators to consider than the one here presented for discussion. I feel certain that we shall all enter on it with minds open to conviction on all points. We are all in search of that happy and safe middle ground of truth and justice which history has shown invariably lies between the positions occupied by the partisans in a controversy.

NATURAL OBJECTS AND A NATURAL PHENOMENA SHOULD BE STUDIED IN ALL PUBLIC SCHOOLS

All leading educators accord to the study of nature a prominent place in their systems of education. These systems may differ from each other widely in detail, but they possess one feature in common; and that is a provision for the study of nature.

Whether the pupil is a kindergarten child or a high school youth he is invariably interested in the study of natural objects. The discipline afforded the pupil is most natural and profitable. In the study of the object the senses are exercised and the attention cultivated; the formation of percepts and concepts involves the activity of memory and of reason. The description of objects gives opportunity to cultivate language, both oral and written. Incident to this expression of ideas the pupils get their drill in orthography, etymology, syntax, punctuation, writing, reading, perhaps also more or less collateral work in arithmetic, geography,

history and literature. The expression of ideas through diagrams and drawings should also be emphasized.

Thus a trip to the field, the lake shore, the swamp, the pasture, the woods, or to a flowing stream may provide material for a fortnight of most profitable and inspiring work. It is understood, of course, that all the nature work done in the grades should seem to be more or less spontaneous on the part of the pupils. The season, the weather, some astronomical phenomenon of unusual interest may furnish material for a week's work. The teacher takes the material at hand and makes the most of it.

Up to the age of 14, the whole field of nature should be carefully and minutely observed, simple experiments performed, and the results of all observations carefully noted and used as subject-matter for a larger part of the school work.

In the high school, the study of nature is no less important than it is in the grammar schools. The curriculum should provide natural science courses carefully limited in breadth and depth to the mental attainments and capacity of the average pupil of high school age.

THE STUDY OF LIFE PHENOMENA MAKES AN IMPORTANT AND ESSENTIAL PART OF NATURE STUDY

Having set forth some of the pedagogic possibilities of nature study in the grammar schools and the relation of this work to the natural sciences as presented in the well-equipped high

school of today, it now becomes necessary for me to show the relation of biology to natural science in this general system of education.

Any teacher in the grades will bear testimony to the abiding interest which pupils uniformly take in living forms and life phenomena. From the day when the pupil is allowed to bring his pet cat or dog to the kindergarten to serve for the subject of a lesson, to the time when he is allowed to make a careful study of one plant from the seed which he plants in the ground, to the gathering of the next generation of seed, the teacher finds living forms and life phenomena an open sesame to the pupils' attention and interest.

In the presentation of these objects of study to children and youths, it is my observation that the interest is far more keenly awakened by the study of what an animal does than by the study of its structure. We all know how interesting to a boy or girl is a mill in operation; they like "to see the wheels go round."

So in the study of living nature, the questions which the pupils ask make it evident that they are far more interested in the functions of the various parts of an animal than in the construction of the animal.

THE PHYSIOLOGY OF LIVING FORMS, THE MOST INTERESTING AND PROFITABLE FIELD OF BIOLOGIC STUDY

In the other fields of nature study the pupil's interest in the action, rather than in the structural or physical qualities of the natural objects involved has led teachers to dwell with special emphasis on the action rather than on the structure. In the light of this experience, teachers may proceed with full confidence that in emphasizing the functions (physiology) of living objects they are in harmony with the highest authorities in methods of presenting natural science.

But physiology so far discussed up to the present time belongs to what is known to physiologists as general physiology. The field of general physiology—i. e., the activities, habits, etc., of plants and animals—should always be presented to pupils before they take up the consideration of any of the more specialized fields of physiology.

Incident to the study of living forms and their actions, the pupil will discover some day that his body possesses many structures similar to those possessed by the animals which he is studying. His pet dog has body, legs, head, eyes, ears, nose, mouth, tongue, teeth. The dog runs, walks, lies down; he sees, hears, smells and feels; he gets hungry and thirsty; he eats and drinks. These points of likeness appeal to

very young children. They begin to ask questions. Their questions must be answered, and their interest satisfied.

The teacher must be cognizant of the limitations of her pupils and not lead them beyond their depth. Legitimate subjects of study would be: What does man eat? Where and how is food produced? How is it prepared? Why does man eat? How does the body use the food? What happens to food in the mouth, the stomach, the intestines? How is the food (digested food) distributed to the parts of the body where it is needed? Why does man need to breathe? What kind of air should one breathe?

These and many other questions of this scope can be taken up with pupils of the fourth to the sixth grade.

RULES OF HYGIENE SHOULD BE PRESENTED IN THEIR LOGICAL RELATIONS

When one is discussing mastication and the use of the teeth, the necessity for thorough mastication and insalivation can hardly be omitted from the discussion. The care of the teeth seems to be a most natural topic to discuss incident to the study of their use. There seems to be no tenable argument against allowing the discussion of rules of hygiene in connection with each function studied. On the other hand, a failure to discuss these rules and to emphasize their importance would be an omission of a duty. The pupil's mind is prepared for it. To formulate a rule for hygienic living based on the solid foundations of demonstrated science is to follow the instinctive inclination of both pupil and teacher. Then let hygiene be taught in the common schools.

How much hygiene should be taught? So much and only so much as is logically correlated to the physiology given. These rules of hygiene should be the formulated conclusions, based on physiologic facts and principles.

VALUE OF INSTRUCTION REGARDING NARCOTICS

If I were asked whether I should give more time to the consideration of these deleterious substances than to the consideration of wholesome foods and beverages, I should unhesitatingly say, No! I should emphasize particularly the value of wholesome foods and beverages, and I should lead pupils to discover the folly of the use of the unwholesome ones.

Having thus demonstrated that it is pedagogically proper to instruct pupils regarding the action of alcohol and other narcotics on the body; that it is pedagogically proper to teach pupils the elementary facts of hygiene including the dangers of indulgence in these injurious

substances, we come to the question at issue :—
 "What is the value of instruction regarding alcohol?"

In the first place it is universally admitted that the use of alcohol is dangerous; further, that a knowledge regarding danger is valuable. Education is the great reforming influence. Knowledge is the safeguard of society. The present generation is protected against the ravages of cholera, of smallpox, and of yellow fever through a widely disseminated knowledge on the part of the people regarding the general causes of these diseases and the rational method of checking their spread. If the future generations are to be protected against the appalling ravages of "the white plague" and against the degenerating influences of that curse of man, alcohol, it must be similarly through a wide dissemination of knowledge regarding them. Therefore, I say, educate, educate, educate. Let the children, the youths, the young men and women know the whole truth, and the value of that knowledge will make itself manifest through a rapid decrease in the ravages of tuberculosis and alcoholism.

If boys and girls are taught the dangers of the moderate use of alcohol, few of them will later suffer from the effects of its excessive use.—*From; an address before the section on Hygiene and Sanitary Science, American Medical Association, June, 1906.*

WHY?

Why do bells for Christmas ring?
 Why do little children sing?
 Once a lovely, shining star,
 Seen by shepherds from afar,
 Gently moved until its light
 Made a manger-cradle bright.
 There a darling baby lay,
 Pillowed soft upon the hay;
 And its mother sang and smiled,

"This is Christ, the holy child."
 Therefore, bells for Christmas ring
 Therefore, little children sing.

—*Eugene Field.*

THE SPIRIT OF CHRISTMAS

RING, happy bells, o'er plain and hill—
 Ring loud, ring clear, ring sweet, and fill
 The souls of those who pause to hear
 With reverent thought and Christmas cheer.
 Swing wide the heart's closed door, and say
 "Come in!—all men are kin to-day!
 Come in—come in! Clasp hands, and break

The bread of friendship
 for the sake
 'Of Him who came to
 earth to find
 His brothers in all hu-
 mankind."

Oh bells, ring in, to
 make sublime
 The century's dawn,
 the glad New Time.
 The dreamed - of,
 longed - for time
 when we
 May gain a glimpse of
 things to be
 When love is law, and
 hand in hand
 Go right and truth
 adown the land.
 Ring out the false, ring
 out the wrong,
 And help men voice
 the mighty song
 To grow from God's
 eternal plan
 Of man in fellowship
 with man.

—*E. L. Rexford.*



"The sudden splendor that thrilled the night,
 And made the dawn a shining way
 When first earth awakened to Christmas day."

"WHEN Christ in Bethlehem was born,
 The winter night seemed rosy morn;
 So bright the stars men thought 'twas day—
 The world in golden beauty lay;
 And yet one star in splendor there,
 Than all the rest more heavenly fair,
 The Magi to the manger drew.
 As shepherds watched their flocks by night,
 Bright angels from the world of light,
 With music filled the trembling air,
 And God himself seemed everywhere.
 'Be not afraid,' they cried, "for see!
 It is God's holy Jubilee,
 With peace on earth, good will to you!"

THE CELL BUILDERS

BY E. L. TRANSEAU

WHEN a man is about to build a house he usually gives careful attention to the quality of the material he is to use. He chooses bricks or boards that will stand the wear of time and weather.

Not everyone in these days is called upon to exercise his judgment in building a dwelling house, but every man, woman, and youth becomes responsible for the strength and durability of a far more important structure—his or her physical body.

The body is composed of cells which correspond to the bricks and boards of a dwelling house in that they are the units upon whose strength and durability those of the whole largely depend. The cells build the body, taking up the food that is brought to them by the blood and converting it into muscle and brain and other parts, whose working ability helps or hinders the health and achieving power of the individual.

It is an easy matter, for most people, in these days of prosperity, to give their cells all they need in the way of food for strengthening and building up the body. In many cases there is even danger that too much food will be given them and that they will become clogged and loaded down with material that they cannot use.

But the owner of the bodily house shows his worst judgment in poisoning his bodily cells with substances that weaken them or cause them to die or dwindle away.

Alcohol interferes with the general changes between the new and worn out material of the body in a way that leads to a loading of the cells with fat and loss of their proper working material.¹

Among the most important cells in the body are those that make up the muscles of the heart, for upon the strength of that organ depends the feeding and scavenging of the whole body. The man who drinks beer or other alcoholic drinks in place of water or other non-alcoholic beverages, is weakening the muscle cells of his heart and courting heart failure from "fatty heart" or other organic trouble.

Alcohol seems really to poison the active cell material (the protoplasm) of the heart muscle. As a result, the nutrition of the cell material is so far interfered with that marked changes of a fatty nature may be brought about.²

⚡ The cells that compose the liver stand in much the same relation to the body that a patriotic army holds to a country threatened with hostile invasion.

Alcohol is the frequent cause of a disease of the liver in which the substance composing the

true liver cells gradually gives place to a foreign substance which cannot protect the body from invasion by poisons.³ This disease is called hardening, or cirrhosis of the liver.

The cells that compose the brain are the most important of all, for the brain is the ruler of the body, and these cells, being the most delicate, are the first to be injured by alcohol.

Alcohol acts as a poison upon the brain and nerve cells.⁴

Dr. Berkley, of Johns Hopkins University, has shown that alcohol is able to change the form and substance of the nerve cells, to impair their nutrition and their power to act.

Some of the worst effects of alcohol on brain cells have been obtained by the microscopic study of specimens taken after death from alcoholized animals or human beings; but science is by no means confined to such extreme effects. She has learned to measure and compare the work which the brain can do when its cells are in a normal condition with that accomplished when they are under the influence of very moderate quantities of alcohol, and she finds that even small quantities, such as the very moderate drinker takes to give him "the feeling of well-being", can lower the quality and quantity of brain work.

Dr. Bezzola, a Thauringian Sanitarium Director, describes the bounds science has found for moderate drinking as follows:

"As soon as the pleasurable feeling, which is the object of drinking, sets in, the irritation of the brain by alcohol has begun."

Every sensible man, knowing these facts, will wisely choose to abstain from the use of a substance which has such power to impair the structure and functions of his body, and thus to lessen his efficiency as an individual and as a member of society.

Names of authorities whose teachings are stated above:

¹ Dr. W. Ford Robertson, a pathologist connected with the Scottish asylums.

² G. Sims Woodhead, Professor of Pathology in Cambridge University, England.

³ Dr. James Barr, President of the Liverpool Medical Institution.

⁴ Dr. Rolleston, in Albutts' "System of Medicine."

✿
"Belle was asked where her little brothers, aged four and two, were. She replied, 'They are sitting on the doorstep talking about old times.'"

✿
Gracie—Mamma, what does Santa Claus do after Christmas?

Mamma—Why he collects toys for the following Christmas.

Gracie—Oh, I know! He takes the papers, and watches out for bargain sales.—*Exchange.*

SCIENTIFIC TEMPERANCE IN THE
FIRST SIX SCHOOL GRADES

BY MRS. ANNIE W. CLARK

President Ohio Woman's Christian Temperance Union

It has been truthfully stated that the character of men and women is largely decided between the ages of six and fourteen years. In other words, during that period of our lives when we are taking everything in, and giving little or nothing out, certain life principles settle to place, and become foundation stones on which the character structure is builded.

In view of the present relations of society to the drink habit, there is nothing more important in a child's education than that in early years he learn the dangerous nature of alco-

perhaps the girls, will be American voters, and this age will be a tremendous factor in securing laws regulating and prohibiting the liquor traffic. A majority of these children come from homes that, from hereditary tendency and ignorance, are friendly to the drink habit, and consequently if not taught the baneful effects of alcoholic poison, they will, too often grow up to swell the criminal, pauper and defective class that makes up the "75 per cent from drink" that fill our penitentiaries, work-houses and asylums.

Mrs. Hunt said that under our "government of the people" only the ballots of a majority of the voters can vote out the saloon, and that a temperance teaching that does not reach the majority will educate a minority, but at the

42

CHRISTMAS

MARY STANHOPE
*Moderato*MOZART
From the Grand Opera "Marriage of Figaro"

209

1. Clear a - cross the snow, Sweet - ly there come and go
2. Chil - dren's voi - ces near, Join - ing the cho - rus clear,
Bells that ech - o far A song of love and glad - ness;
Sing of hap - py homes And deeds of lov - ing kind - ness;
Hear the Christ - mas bells, Their song a sto - ry tells,
None for - got - ten be Round our bright Christmas tree,
Good will to all men And peace on earth be - low.
Bear - ing for each one A gift of love and cheer.

hol and other narcotics, so that total abstinence from all things containing narcotic poisons becomes a decided principle of life. Fortunately, in the United States this education is not left to the father and mother, nor even to the religious teacher, but by compulsory law is made a part of the public school curriculum.

The future citizenship of this country of ours is in the public schools, and the character of that citizenship is being formed in the first six grades. Shall we not see to it then that these little citizens are so taught that sobriety will be one of the foundation stones of character? We must not forget that large numbers in our schools are the children of foreign-speaking parents, many of them foreign-born themselves, and at the age of twenty-one, the boys, and

ballot box this minority will stand helpless before the unreached majority.

How important it is then that the next generation of this great foreign vote, which even now holds the balance of power in many of our local option elections, should be educated into sober, intelligent American citizens, able to support an American home and strong to protect it against the legalized saloon.

In view of these facts and conditions, we earnestly urge all educators, legislators, and other intelligent, patriotic citizens not to oppose nor deal slightly with the teaching of scientific temperance in the first six grades of our public schools, for to do so is to stand in opposition to the best interests of the home, the church and the nation.—*American Issue.*



Primary Lessons

THIRD YEAR

CLOTHING THE BODY

THE subject of clothes correlates with much that can be used to broaden a child's sympathies, to teach kindness to animals and interest in their lives, respect for labor and care and thoughtfulness for others.

CLOTHES AS A PROTECTION

How many children have ever gone berry-picking in the summer? How many have had their hands scratched by the briars? Why were all the scratches on your hands instead of on your legs and body? What did your clothes do for you when you went berrying?

Who has ever been sunburned? How did the skin feel where it was burned? How can you keep from being burned when you go out in the hot sun? Of what use are your clothes even in summer?

Did you ever go barefoot in summer? How many have ever stepped on something that hurt their feet when they were barefoot? Do you have to be as careful where you step when you have on shoes or sandals? Why not? Of what use, then, are shoes?

CLOTHES HELP TO KEEP THE BODY WARM

Why would you dislike to go out barefoot in winter? Of what use are shoes and stockings in winter? What clothing do we wear in winter that we do not wear in summer? Why? (If the children have been sufficiently trained they may be asked to make a statement about two uses for clothing.)

What is the warmest kind of clothing we can wear in winter? Name some animals that can keep warm when the weather is very cold. What kind of coats do these animals wear? What animals sometimes need a blanket besides their fur coat?

STORY

As Carl was coming from school one very cold day, he passed a horse and sleigh standing by the sidewalk in front of a house. A strong wind

was blowing, and the horse stood all drawn up and shivering with the cold. On the ground under the horse's feet lay a blanket that had fallen off.

Carl took up the blanket and threw it over the horse, spread it all out carefully, buckled it in front and tucked it under the shafts so it could not fall off again. He rubbed and patted the horse and told it he was sorry it had got so cold, and he hoped it would soon be warm. The horse put its head against Carl's shoulder and looked so kindly at him out of its great soft brown eyes that Carl told his mother he was sure the horse tried to say "Thank you."

If the children are sufficiently interested, the teacher may explain further that, being used to a warm stable, the horse is not prepared for a cold wind; and also, that when he is driven he gets warm from his exercise, and perspires until his coat is more or less damp, and this causes him to become easily chilled on standing without an extra cover.

THE SHEEP'S WOOLLY COAT

What animals have a warm coat that is not made of hair like the horse and dog? In a city or locality where the children have no opportunity to see sheep, show a fine picture of sheep, also specimens of wool; a lamb's wool insole may serve the purpose if nothing better can be obtained. Every well-equipped school should have a cabinet where all objects needed for illustrating lesson work can be accumulated and kept ready for use.

Read to the children or teach them the following little poem. Let them reproduce it in their own language. Bring out (1) the fact of the usefulness of sheep in furnishing us with wool for warm winter clothes, and (2) the point that the farmer allows the wool of the sheep to grow during the winter, when they, too, need heavy coats, and only cuts it when the hot weather begins and the sheep will suffer from the heat. Ask the children to name some garments made of wool.

PRETTY SHEEP

"Pretty sheep, now tell me why
In the sunny field you lie,
Doing nothing all the day?
Make yourself of use, I pray."

"Don't you see the wool that grows
On my back to make your clothes?
Cold, ah, very cold you'd be
If you had no wool from me."

"Soon the merry spring is past,
And the farmer comes at last;
Cuts my woolly fleece away
For your coat in wintry day.
Little master, that is why
In the pleasant field I lie."

In hot weather we like something cooler and thinner than woollen clothing. What is our summer clothing made of? Help the children to answer this question for themselves by letting them examine samples of cotton, linen and silk, and look at pictures of cotton and flax plants, of silk worms and cocoons.

THE WORK OF MAKING CLOTHES

Years and years ago, when your great-grandmothers were little girls, people did not go to stores and buy ready-made clothes, as they do now. They did not even buy much of the cloth their clothes were made of. The women spun the wool and the flax into yarn, and wove it into cloth themselves.

(Show pictures of old-time spinning and weaving.) People did not have as many gay clothes as they do now, unless they were very well off, for fine clothes were scarce and costly. Now cloth is made by machinery, in large mills, and does not cost so much. Yet it costs money, which many people have to earn by hard work. In what way can children help those who have to earn money to buy their clothes?

CARE OF THE CLOTHES

Let us see how much we know about taking care of our clothes?

What ought we to do with our clothes at night when we take them off? Why do we spread them out to air?

Why do we not put on our best clothes when we are going to do dirty work, or play out of doors? What kind of clothes does a foot-ball or base-ball player wear? Why? Why does a girl wear a big apron when she helps her mother wash dishes? Why does a boy wear "overalls" when digging in the ground or sailing a boat?

Why should we wear clean clothes when we go out among well-dressed people? Why do we need to keep our hands clean when we have on clean clothes?

Tell the true story of a little girl named Elsie whose mamma took great pains to have her dressed in pretty, light, cambric dresses. Many times, just after a nice clean dress had been put on, she would carelessly drop food on it, rub it

with very badly soiled hands, or play in muddy water till the dress was unfit to be seen. Then patient mamma must put on a clean dress. This happened so often that every week, just for Elsie, there were twelve or fifteen dresses to be washed and ironed. Because they were washed so much they soon became faded and worn out, so new ones had to be bought.

Her brother Johnny never thought of saving his shoes when he came to mud-puddles, but ran right through them, spattering his clothes, and getting his shoes wet and muddy. Then the leather cracked, and holes came, and father must buy another pair for him.

In what ways did Elsie and Johnny make it hard for their father and mother? How could they have helped? How can we help our parents?

THINGS TO REMEMBER

Clothes help protect the body.

Clothes help keep the body warm.

We get clothing from plants and animals.

We can help our fathers and mothers by taking care of our clothes.

Animals are our good servants. We must be kind to them.

A REMINISCENCE

"Well, Johnnie, what are you going to give your little brother for Christmas?"

"I dunno. I gave him the measles last year."—*Ex.*

A CHRISTMAS WISH

BY ELIZABETH STUART PHELPS

"WHAT blessing can I wish you, O my friends,
Save that the joyful calm of Christmas-tide

Should wrap your hearts so close that never jar
Of the world's care or grief can enter in,
But only love, to keep you pitiful,
And faith, and hope, to keep you strong and true?
"A Merry Christmas" and "A Glad New Year"
I wish you, and may God's exceeding love
Enfold you all, until His tender hand
Shall lead you safely home, to love's own land!"



"For little children everywhere
A joyous season still we make;
We bring our precious gifts to them;
Even for the dear child Jesus' sake."



THE TEETH AND DIGESTION

OBSERVATION EXERCISES

THE day before the lesson, ask the children to take a small mirror when they go home and look at their teeth and find out all they can about them. Ask them to notice how many teeth they have in all; how many are alike in shape; how many different shapes they find; and where they are located.

Ask them to find out all they can about the uses that different animals make of their teeth. Encourage them to look as they have opportunity, to recall what they have seen, and to ask others what they have observed.

NOTE. Some children may report looking into the mouths of pet cats and dogs to see their teeth. Caution them that if they do this they should always wash their hands afterwards, before touching anything, as animals are seldom clean.

CLASSIFICATION OF OBSERVATIONS

Let the first report be on the different uses animals make of their teeth, and let those uses be classified. Thus, if the squirrel is reported as gnawing the shell of a nut, ask what other animals use their teeth for gnawing. Write the names of such animals in a line under the word "gnawing." Find which teeth these animals use for gnawing; show that gnawing is really cutting, and that the prominent teeth in these animals are the cutting teeth. Show or have a drawing made of a cutting tooth.

When the cud-chewing animals are mentioned let it be determined which teeth they use for chewing. Show that this chewing is really grinding, and that these cud-chewing animals have strong grinders. Show a picture of a typical "grinder" or molar.

The special use of the canine teeth will not be so easily developed by observation, and as it is not really desirable to emphasize the operations of the flesh-tearing animals, attention may be called to them by asking for a description of the shape of the most prominent teeth

in the cat or dog, and point out that they are used to hold or separate food.

HUMAN TEETH

Have the children report their observations of their own teeth, and compare the shapes of teeth reported with the three classes of teeth observed in the animals, until the discovery is made that in man no one kind of teeth is especially prominent, but that all are useful.

Call attention to the greater beauty of human teeth and also to their greater liability to decay. Speak of proper and improper uses of the teeth, the strengthening effect of foods that require vigorous chewing; the danger from too much soft food; the necessity and proper way of keeping the teeth clean.

CREATURES WITHOUT TEETH

Set the children to observing the mouths of chickens, pet birds, pigeons, etc. letting them make the discovery that fowls have no teeth. Arouse their curiosity by asking them how, then, the fowls grind their food. Tell them of the gizzard of fowls in which very small stones grind the grain and other food they eat.

Interest the children in finding out what material the various fowls and birds, including caged ones, pick up to use for grinding their food. Get now a concise statement of the fact that the fowl's gizzard takes the place of teeth in grinding its food.

WHY MASTICATION IS NECESSARY

Interest concerning the work performed by the stomach may be aroused by asking the children the day beforehand to try to find why animals need teeth and why birds need gizzards for grinding their food. Why does the food need to be ground or made fine?

Begin the lesson by illustrating the word *dissolve*. Have a tumbler of water and a lump of sugar. Let a child taste the water. Then stir in the sugar, the class watching and telling when they can no longer see the sugar. Let the child sip the water again and report the difference in taste. Lead the children to see that although the sugar is still in the water it cannot be seen because it is dissolved. Let them give a few sentences illustrating the meaning of the word dissolve.

Explain that as long as kernels of corn remain in the hen's gizzard they do not nourish her body, that she must have food in all parts of her body; in her skin, to make her feathers grow; in her legs, to give her strength to run, to scratch, etc.

Let the class try to think how the food they eat can get to the ends of their fingers. Explain that it has to be carried in tubes so fine

that no lumps can pass through them; that it has therefore to be dissolved in a fluid that will run easily through these tiny tubes; and that they have all seen the fluid which carries food thus dissolved, when they have looked at the blood that runs from a cut or scratch.

Draw out a statement of the fact that food must be dissolved in order to feed the body.

Also, that food must be chewed or ground fine in order that it may be easily dissolved.

ACTION OF THE SALIVA

Tell the children you wish them to discover something which they do very often, but which they may never have noticed. Direct them to place one hand at the front of the throat and to hold it there until they feel something moving in the throat. If the act of swallowing is not noted within a reasonable time, pass a glass of water to a child and ask him to drink, still keeping his hand at his throat.

As soon as attention is drawn to the act of swallowing let note be taken of how often they do it, and why.

Exhibit a box of candy. Tell the children they are to have some later, but that now they are to observe closely this act of swallowing and raise their hands as often as they feel it taking place.

Let them discover that the sight of the candy has increased the rate of swallowing. Refer to the use of saliva to moisten the food, and to change starch to sugar.

The experiment of chewing a piece of cracker until it begins to taste sweet may here be tried, or referred to if it has been used the previous year, to show that the saliva of the mouth changes starch to sugar.

Pass the candy and after each has eaten his piece ask them to tell where the candy is now.

Have a drawing of the stomach on the board or show a picture. Show a small rubber water bottle and let the class tell the difference in shape between the bottle and the stomach, discovering that the stomach has two openings instead of one.

Tell them that the "walls" or sides of the stomach are now sending a fluid in to mix with the candy, just as the mouth did when the candy was in the mouth; that this stomach fluid is called the *gastric juice*; that whenever we eat a meal, the stomach prepares a large quantity of this juice and pours it in upon the food to change and dissolve it.

THE STOMACH MOTION

Into a tumbler half full of water drop a few drops of ink or blueing, holding it up before the class. At first hold the tumbler very still. Then move it round and round in a circle until the water inside circles around and causes the ink or blueing to mix more rapidly with the water. Get the children to state what effect the motion of the water has in mixing the contents of the tumbler.

Partially fill a rubber water bag and stop it tight. Show that compressing the bag in different places causes the water inside to move.

Explain that the walls of the stomach are largely composed of muscles which can keep it in motion while there is food inside, and thus cause the food to be mixed thoroughly with the stomach fluids.

HOW THE FOOD GETS INTO THE BLOOD

Strip the casing from a link of sausage. Cleanse it carefully in warm soda water. Leave the lower end tied so

that no fluid can escape. Place it in a little water. Keep it moist.

Begin the lesson by preparing a little salt water in a tumbler. Let a child taste and report. Empty the skin bag, suspend it by the strings at the top on a pencil and pour into it (with the help of the child if needed) the salt water. Dry the bag on the outside with a clean handkerchief, or soft cloth. Let the children see that no salt water drips from the tied end.

Empty and rinse the tumbler and put in fresh water. Let a child taste it, to see that it is perfectly fresh, now suspend the bag containing the salt water in the tumbler containing the fresh water, taking care that the water doe



"Wherever watching mothers pray for their babes today, The precious lives are safer because of One that lay Defenceless in the manger two thousand years ago."

not come up high enough to run over the top of the bag.

Set the tumbler aside and go on with the lesson until there has been time for the fresh and the salt water to intermingle. It is best to try the experiment before presenting it to the class, in order rightly to gauge the proportions, and the time required for the interchange of the fluids. When this has taken place let one or more pupils taste (with a teaspoon) the water in the tumbler outside the bag and discover that it is salty.

Obtain a statement of the fact that some substances when dissolved will pass through a very thin skin or membrane.

Lead the children to see that dry salt would not have passed through the membrane, but that when dissolved in water it can.

ABSORPTION

Apply the discovery that substances in solution can pass through membranes, to the course of food after it is digested. Show or draw a diagram of the stomach and trace the passage of the food out of the stomach into the duodenum (without giving the name or going into minute descriptions of the villi).

Point out the place in the intestines where the dissolved food begins to pass out of the intestines and into the blood. Lead the children to compare this passage with that of the salt water in the skin bag out into the water in the tumbler.

Point out the difference, that when the food has passed out of the intestines into the blood-vessels it reaches, not water, but blood. The food which was meat, potatoes, bread, etc., before it was digested, is now a part of the blood and can pass everywhere, through the fine blood tubes, to feed the body.

THE PRINTED LESSONS

When the illustrative work of each section of the subject is completed the children will be prepared to take up their primary physiologies as a reading lesson and will be interested in finding there the same or perhaps additional facts, stated in concise and simple form. They may afterwards reproduce the main points, in their own language both orally and in writing and drawing.

PRACTICAL QUESTIONS IN HYGIENE

Why should we wish to have sound teeth? Why is it necessary to keep the teeth clean? Why should our food be well chewed? What is the harm of gum-chewing? How is the stomach injured by eating too much? (Show how much more difficult it is to keep the contents of the water bottle moving when it is entirely full.)

Why are we careful not to take much pepper, mustard, horse-radish or ginger into the mouth at once? Why should we be just as careful about taking biting substances into the stomach?

How does icewater drunk with meals delay digestion? Are tea and coffee harmful?

In what ways are alcoholic beverages like wine, beer, cider, ale, etc., injurious to the stomach and digestion? Show that (1) they irritate the stomach; (2) they do not aid digestion but rather hinder it by weakening the power of the gastric juice to dissolve the food.

What is meant by "aiding digestion" and what is the best "aid"? A good appetite is the best aid to digestion and the only one that a healthy person needs. Some people take patent medicines, or wine, beer and ale with the wrong idea that they "aid" digestion. On the contrary, they are liable to slow the process, and irritate and weaken the stomach until it gives trouble all the time.

Show also that these drinks have almost no food value, beer contains so little that several gallons of beer would not contain enough nourishment to feed a man properly one day.

Be sure the class understand clearly that these drinks are different from, and more dangerous than the other drinks mentioned, because, in addition to the harm they do the stomach, they can create a craving for alcoholic drinks which may become uncontrollable.

Dyspepsia, want of appetite and constant loss of flesh may also be explained by the local irritation [of tobacco] produced by the nicotine swallowed in the saliva.—DR. CUSHNY, Prof. Therapeutics, University of Michigan.

Experiments made by Buchner, Gluzinski, Hemmeter have shown that liquor, taken as a beverage with meals, exercises on the whole, a harmful influence, while in case of gastric disease its use is not followed by beneficial results.—*Therapeutic Gazette*.

Alcohol and wine are to be included among the injurious influences that make the ferments of the digestive juice ineffective, or at least retard their action.—DR. WORBLEWSKI, *Internationale Monatsschrift* (1904).

There is a widespread belief in the value of bitters as appetizers and aids to digestive processes, hence an enormous consumption of bitter ale and beer at meal times. Reichman shows that in the fasting stomach, the secretive activity of which is normal or diminished, a bitter drink produces less secretion of gastric juice than a draft of distilled water. These investigations go toward showing that the belief in bitter ale and beer as digestive agents is a fallacious one.—*Temperance Record* (1903).

School Physiology Journal

COPYRIGHT APPLIED FOR

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.\$0.50 each
Clubs of 50 and over..... .40 each

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, ACTING EDITOR

EDITH M. WILLS, Assistant Editor

Published monthly at 23 Trull St., Boston, Mass.

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"No silver or gold is needed for giving,
If the heart is filled with Christmas love;
For the hope of the world is kindly living,
Learned from the joy of God above."

Christmas Greetings to all our readers:

A TANG in the air, brilliantly lighted shops, streets thronged with good-natured crowds, bright-faced children tip-toe with expectancy, glossy green wreaths, crimson bells and streamers, merry greetings and interchange of gifts,—yet, this is not the Christmas.

WEARY children working long hours to supply the joys of their fortunate brothers and sisters, foot-sore cash girls and errand boys trudging about with change and parcels, insufficient food and clothing, cheerless homes, dark alleys, selfish overreaching, sullen discontent,—surely, this is not the Christmas.

FACES bright in anticipation of giving rather than of receiving, cheery words and the warm handclasp to hearten the discouraged, the spirit of helpful sympathy, the good will that each year seeks to realize a little more perfectly the Christ ideal in the relations of man to man, love which is always service,—this is the true Christmas.

A SUBJECT FOR REFLECTION

A FACT, Mr. Riis says in his fascinating story of the "Making of an American," is a tremendously effective weapon before which nothing can stand in the long run. The temptation to point a moral and adorn a tale is well-nigh irresistible, but the pen is restrained beyond asking our readers carefully to consider the article in another column on the

importance of temperance teaching in the early school grades, in the light of the following facts:*

Of the 16,000,000 children in the public schools in the United States, nearly 14,000,000 are in the first five school years.

The sixth grade can reach only one pupil in twenty of the 16,000,000 with temperance and anti-narcotic teaching.

But one pupil in forty-seven can be reached in the eighth school year.

The first year in the high school reaches but one pupil in sixty-five.

When Socrates was asked how he would build up his model republic, he replied, "I would send to the country everybody above ten years of age, and begin to train those who were left."

A word to the wise is sufficient.

USE NOT ABUSE

A popular writer for the daily press recently contributed the following to her column:

"Like many other things, a little absinthe is good for the digestion. It is a tonic and no more harmful than fennel tea, but its *abuse* has led to such fearful havoc in Europe that the law (forbidding its sale) in Switzerland became a necessity to protect the rising generation."

There the writer leaves it, without one word about the nature of the drug to create a craving for itself which is the real cause of the "havoc."

No more forcible illustration of the need of general enlightenment concerning the nature of narcotics could be asked for than this deplorable slip by a writer whose productions are usually characterized by a high tone.

In the same article, this writer unwittingly furnishes another illustration of the general ignorance of this relation of cause to consequence in the matter of narcotics. Speaking of the way men regard smoking among women, she quotes one as saying:

"It is one thing to have your wife take a few puffs with you alone after dinner, and quite another to see her as crazy for her smoke as some old man for his pipe."

He might just as well have said, "It is one thing to give a child laudanum, and quite another to see it immediately go to sleep." He would not say this about laudanum because he knows it is a sleep-inducing drug. Neither would he blame his wife for being "crazy for her smoke," after he had encouraged her to begin, if he recognized tobacco as a substance capable of producing an abnormal craving.

Until knowledge of the nature of narcotics becomes more general, there is some excuse for the unwitting blunders of busy laymen whose time for study is limited, but this is not the

*United States Educational exhibit, St. Louis, 1903.

case when a physician, whose business it is to know the nature of drugs, publishes such a statement as the following, found in a recent medical journal :

"It is a sad commentary on the frailty of human nature that drunkenness has always existed " in spite of "punishments inflicted on drunkards," "attempts to abolish," etc.

Is it "a sad commentary on the frailty of the human race" that strychnia will cause spasms, that morphine will benumb the nerves, that an emetic will produce nausea? Just as much, and no more is it "a sad commentary" that the characteristic tendency of absinthe, and other alcoholic beverages, tobacco and kindred narcotics is to weaken the will and set up a craving for more.

Only a short time ago, a celebrated German investigator, Professor Meyer, in the opening lecture of the newly-organized Harvey Society, in New York, gave the results of his own experiments and those of others concerning the action of narcotics. He said that all substances called narcotics are able to dissolve fat, that they enter

into combination with the fatty constituents of cells (nerve cells are especially rich in fat) and "immediately inhibit the vital processes of the cell."

When we see the evidence of such inhibition or checking of the vital processes of the nerve cell, in the drinker's suspension of judgment and self-control, or in the absinthe or tobacco slave's irritability and continued craving for renewed deadening, we ought not to characterize it as abnormal human weakness. We must recognize in these effects the characteristic action of the drugs that produced them. It is not the weakness of the subject, but the nature of the substance.

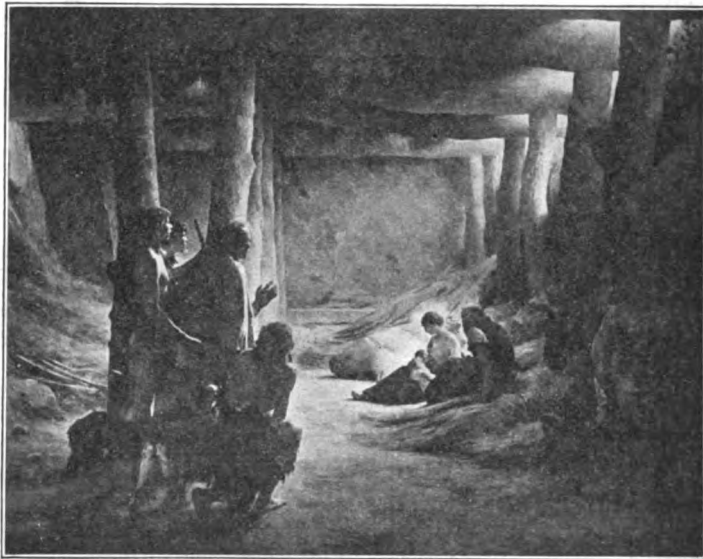
Hence we cannot if we are well informed, speak of the "havoc" of absinthism, alcohol-

ism and morphinism as the results of "abuse." We must call it the natural consequence of the "use" of enslaving drugs.

AN ALARM BELL TO GERMAN BREWERS

ONE of the most striking reports of the progress of the anti-alcohol movement in Germany comes from one whose pen is serving the brewing industry through the press. He quotes to his employers the words of Machiavelli, that in politics, as in all struggles, the result depends largely upon an early recognition of the danger, before it is seen by the masses, and when it can be nipped in the bud. He says :

"All the methods by which abstainers in other lands have attained such immense results are now being employed in Germany, — the systematic co-operation of state and municipal authorities, of employers, the school, the clergy, the women, and through them the children. There are already in Germany 55,000 organized abstainers, who raise for yearly disbursement over a



"See where the clear star bendeth
Over the manger blest;
See where the infant Jesus
Smiles upon Mary's breast"

million marks [\$250,000]. If we allow ten or fifteen years more to go by unused, the number of abstainers in Germany will have increased to the high figures reached in America, England, Sweden, and Norway."

The method of opposition to temperance work now going into operation in Germany is the publication of an illustrated weekly, which sings the praises of beer, makes all manner of attacks upon the abstainers (none whatever upon the "moderate" combaters of alcoholism") and publishes so-called "scientific" articles, the falsities of which are easily pointed out by the German scientists who have seriously investigated the subject.

The next ten years will probably see some lively threshing of the alcohol question there.

"They Must Upward, Still, and Onward, Who Would Keep Abreast of Truth"

Abstinence for The Navy.—The British Navy Department has recently ordered that junior naval officers (under 20 years of age) shall be prohibited from using alcoholic beverages; and that older officers are advised to do the same.

Well-Watered Territory Increasing.—A little more than half of the entire area of the United States is now free from legalized saloons, and 33,000,000 of our people live under prohibitory laws. There are fewer saloons south of Mason and Dixon's Line than in the single state of New York.—*Presbyterian Report*.

Archbishop Bruchesi Advocates Abstinence.—The archbishop declares that the temperance movement in the thirty parishes comprising the Montreal diocese is meeting great success. He believes that the hope of the movement is in educating the rising generation. Hitherto, he says, the children have been taught not to lie, steal, or cheat, but hereafter, "Thou shalt not drink whiskey" will be added to the former commands.

A Temperance Summer School.—In order to meet the widespread demand for more exact knowledge on the scientific and other aspects of the Temperance question, the Department of Scientific Instruction and Information, in connection with the United Kingdom Band of Hope Union, will hold a summer school at Lucerne in June next, at which it is expected that a large number of the leaders of the movement will be present.

Liquor Advertisements Excluded from Magazines.—The *Review of Reviews* (Oct.) says: "The editorial prestige and standing of the *Review of Reviews*, together with its policy of excluding all kinds of objectionable advertising—whiskey, beer, unsound financial, patent medicines, etc.—should give our readers implicit confidence in its paid columns."

Ridgway's, the new weekly news magazine, published simultaneously in fourteen cities every two weeks, has adopted as a principle of its business department, that no advertisement of cigarettes, tobacco in any form, or intoxicating liquors will be received.

Saloons Hurt Business.—Mr. Leif Jones, M. P., one of Great Britain's most active temperance workers, is convinced that one of the reasons of British commercial depression is the great consumption of alcoholic beverages. "I recently met the finished article of the liquor trade," he says. "He was lying in the gutter;

he had no hat; the hat trade was suffering. His coat was full of holes; the tailoring trade was suffering. He had no shirt; the hosiery trade was suffering. Indeed, I can hardly mention an industry in this country which was not affected by that man's insobriety."—*Ex*.

Vermont Tires of License.—The prohibitory law was repealed in 1902, and the liquor press joyfully heralded it as one more step toward their long wished era of national "personal liberty." Here is the record of Vermont for the four years since local option was adopted. The number of license towns from 1902 to 1906 was as follows:

1903, 92 "wet" towns.

1904, 40 "wet" towns.

1905, 34 "wet" towns.

1906, 29 "wet" towns.

The total local option votes of the State have shown majorities as follows:

1903 gave 5,222 "yes" majority.

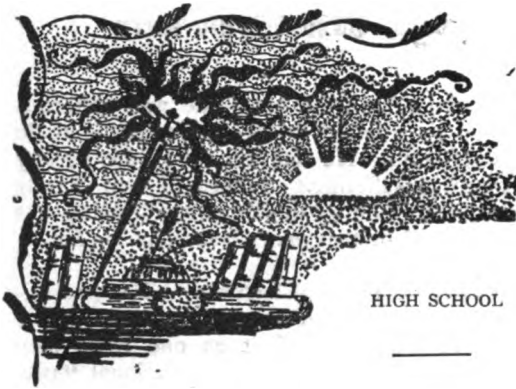
1904 gave 7,008 "no" majority.

1905 gave 6,020 "no" majority.

1906 gave 8,697 "no" majority.

Luther Burbank's "Thirteen-inch Gun."—"Do you think that whiskey and tobacco impair the faculty for work?" Mr. Burbank was asked recently, and he replied:

"If I answered your question simply by saying that I never use tobacco and alcohol in any form, and very rarely coffee or tea, you might say that was a personal preference and proved nothing. But I can prove to you most conclusively that even the mild use of these things is incompatible with work requiring accurate attention and definite concentration. To assist me in my work of budding, work that is as accurate and exacting as watchmaking, I have a force of some twenty men. I discharge men from this force at the first show of incompetency. Sometime ago my foreman asked me if I took pains to inquire into the personal habits of my men. On being answered in the negative, he surprised me by saying that the men I found unable to do the delicate work of budding invariably turned out to be smokers and drinkers. These men, while able to do the rough work of farming, call budding and other delicate work 'puttering,' and have to give it up owing to an inability to concentrate their nerve force. Even men who smoke one cigar a day I cannot intrust with some of my delicate work. Cigarettes are even more damaging than cigars, and their use by young boys is little short of criminal."



THE RESPIRATORY SYSTEM

THE heart, lungs, and stomach have been referred to as the tripod of life, any one of which destroyed, life must cease. When we consider that the "white plague" carries off one seventh of the human race; that one-third of these are between the ages of fifteen and forty-five, when their lives are of the most value to themselves, their families, and the state; and when it further appears that tuberculosis is now known to be both curable and preventable by hygienic means, it is clear that high school pupils at least should be not only familiar with the aspects of respiratory hygiene commonly studied but also with the causes (both exciting and remote) of this disease, the methods of prevention, the dangers of certain drug treatments, and the hygienic means of restoration to health. Moreover, the question of stamping out a disease which causes an annual loss to our nation of nearly 150,000 persons is a live issue. Most young people are naturally crusaders and can do much toward bringing about a state of intelligence that will practically bring to an end this great waste of life and power.

Naturally the general subject of respiration would be begun by a study of the anatomy and physiology of the respiratory system. Under the head of hygiene might be considered the reasons why heavy hangings, thick carpets and upholstered furniture are apt to be unsanitary, and the question of proper ventilation of the home and street cars and of schools, churches, and other public buildings.

In studying the general effects of alcohol emphasize the points (1) that alcohol by partially paralyzing the vasomotor nerves allows the capillaries of the lungs to become congested and thus diminishes the breathing capacity; (2) the continued congestion of these tissues abnormally thickens them so that the absorption of oxygen and the escape of carbon dioxide is obstructed.

Show how the use of tobacco, and especially of cigarettes, by drying and irritating the membranes, predisposes to catarrh and various disorders of the respiratory tract and sometimes even to consumption.

Before taking up the special subjects of pneumonia and tuberculosis, assign to each pupil one or more of the suggested topics, combining or dividing them as seems desirable. For supplementary material see quotations and list of references at end of this lesson. These papers may be read in class and discussed, or the following method may prove profitable.

Have the class organize as a board of health and elect a chairman, who, when the class is called, takes his position on the platform, calls the meeting to order, and presides over the deliberations, all of which are to be carried on with due regard to parliamentary form. The teacher sits at the chairman's right and may offer such suggestions as seem necessary or wise, but for the most part leaves the class to work out the scheme according to her plan.

After calling the meeting to order, the chairman states the business of the meeting somewhat as follows:

Inasmuch as our nation is losing approximately 150,000 persons yearly and our state (or town or city) alone—persons through the infectious and preventable disease, tuberculosis, we are met to consider the cause, prevention, and cure of this malady. Our object is to begin a campaign of education and sanitary reform to check the disease where it already exists, and to prevent new cases from contagion. Will Miss A. introduce the subject by reading her paper on Bacteria?

Miss A. reads her article and other members take notes. The papers may be limited, each being followed by discussion, or all the papers intended for the period may be read and discussion follow. In this case, ample time should be reserved for this important part of the lesson. The teacher may properly join in the discussion if she wishes to call attention to facts that may not have been covered.

At the close of the lesson period, the meeting is to be adjourned to the next class period when a new chairman may be appointed, thus giving the first an opportunity to read the paper he has prepared. When all the papers have been read and discussed, the teacher should ask each pupil to compile an article from notes made during the sessions of the board. The papers may be written as exercises in English and some of the best published in the local press, thus answering the double purpose of securing careful work and of giving vital facts to the public which is in great need of such information.

SUBJECTS FOR PAPERS

1. Bacteria ; as our friends, as our enemies.
2. Particular study of the nature of germs which produce pneumonia ; manner in which this disease may be communicated ; action of alcohol as a predisposing cause.
3. The tubercle bacillus ; how communicated ; condition under which it grows ; food it consumes ; products it gives off ; ways in which it can be destroyed.
4. Characteristics of tuberculosis due to environments :
 - a. House disease.
 - b. Family disease (from intimacy of affection.)
 - c. Occupation disease, e. g. due to employment in overcrowded and badly ventilated workrooms or in an atmosphere filled with irritating substances.
 - d. Disease of the poor, overworked, enfeebled, dissipated.
5. Alcohol as a predisposing agent in tuberculosis :
 - a. Is directly injurious to lung tissue.
 - b. Lowers general bactericidal power of blood and the resistant power of the body.
 - c. Favors insufficient nutrition by impairing appetite and digestion, and by taking money needed for purchase of good food.
 - d. Often robs drinker of means of paying for proper clothing and shelter, and makes him careless about exposing himself unduly.
 - e. By lowering vitality of drinker's offspring makes them peculiarly susceptible to this disease.
6. Nature of the disease : slow ; preventable ; curable.
7. Danger in use of proprietary remedies :
 - a. Many contain opiates or alcohol which may increase the weakness of the patient.
 - b. Often cover up the real symptoms and thus delay proper treatment till the patient's chance for recovery is almost or quite gone.
8. How prevented :
 - a. By such sanitary care of patient and environment as will ensure the destruction of all bacilli.
 - b. Compulsory registration of all cases.
 - c. Free sanatoriums for indigent sufferers.
 - d. Fumigation of rooms in which consumptive cases have been cared for.
 - e. Periodical medical examination (for three or more years) of members of a family in which the initial case occurred.
 - f. Hygienic living and avoidance of vices and excesses.
9. How cured :

By pure air, abundance of highly nutritious, easily assimilated foods, e. g. milk, eggs. Medical supervision.

TOPICS FOR GENERAL DISCUSSION

1. What conditions in our city favorable to the spread of consumption can be eliminated?
2. Our personal duty in the matter.

REFERENCES

Apply to the Secretary of your State Board of Health for all bulletins on tuberculosis stating how many copies of each are desired. Such documents are free. Ask local boards of physicians for data.

Write to Lansing, Michigan, for Teachers' Sanitary Bulletins also issued by the Board of Health ; and to Sec'y State Board of Health, Brattleboro, Vt., for Bulletins, including "Treatment and Control of the Tuberculous Patient in his Home," by Dr. Flick, which is excellent.

"The Teacher's Part in the Tuberculosis Problem," by S. A. Knopf, M. D., *New York Medical Record*, Feb. 17, 1906, or published in pamphlet form by Wm. Wood & Co., New York City, should be in the hands of all teachers.

Experiments made by Dr. Hayward, bacteriologist, proved that common house flies have been the means of scattering the infection of tuberculosis.—*Bulletin of Mich. Board of Health*.

The tuberculosis patient with a good heart, a good stomach, an early diagnosis made, and sufficient means of support for several months without worry, violent or prolonged exertion, will permanently recover in ninety per cent. of the cases.—C. P. AMBLER, M. D.

In my experience the cures obtained in so-called ordinary home climates, while often requiring a little longer time, seem to be more lasting than those obtained in more congenial climes.—S. A. KNOPF, M. D.

Opiates and alcohol should never be used in the treatment of consumption.—S. F. FLICK, M. D., Director of Phipps Institute.

Collier's magazine mentions six consumption cures(?) which have been shown by analysis to contain such dangerous drugs as chloroform, hasheesh, and opium. Several contained alcohol.

Alcoholism is in point of fact the most powerful factor in the propagation of tuberculosis.—PROF. BROUARDEL, France.

Alcoholism is certainly the most active co-operator of the deadly tubercle bacillus. It should be impressed upon the masses that alcohol in whatever form it may have been administered has never been either a prevention or a cure for consumption.—S. A. KNOPF, M. D., New York. Asso. Director for Clinic for Pulmonary diseases of the Health Dept., etc. (1906).

Alcohol destroys the integrity of the nerve fibre and by operating on the same tissues may bring about that peculiar destruction of lung substance, known as pulmonary consumption.—THOS. J. MAYS, M. D. (1906).

The practice of inhaling the smoke so constantly as is the habit of the cigarette smoker, has the effect of keeping the lung tissue thoroughly impregnated with it, and prevents the blood from becoming properly oxygenated.—C. SPENCER KINNEY, M. D.

It is said that the increasing mortality in the French army, which is stated to be steadily on the increase, is largely due to pulmonary affections that are themselves favored by the general habit of cigarette smoking.—*Journal American Medical Association*.

Extensive investigations made by Prof. von Bunge show that the children of alcoholic fathers are 100% more liable to consumption, and 300% more liable to nervous diseases than those of abstemious fathers.—THOS. J. MAYS, M. D., Philadelphia (1906).

Alcoholic liquors are of damage to consumptives because they tend to impair nutrition, disturb the action of the stomach and give a false strength to the invalid on which he is sure to presume. Besides, we know that in countries where drinking prevails most the ravages of tuberculosis are most marked.—EDWARD L. TRUDEAU, M. D., Adirondacks Sanatorium.

Alcohol puts the descendants of the users to disadvantage. They are born with a minimum of resistance. By creating congenital disabilities alcohol predisposes the descendants of the alcoholic to tuberculosis during youth. It is this that causes the children of alcoholics to be attacked by Pott's disease and pulmonary tuberculosis.

Finally, by continuing its action upon an organism already infected by tuberculosis, alcohol aggravates the infection and hastens its development. Although the real tangible cause of tuberculosis is the Koch bacillus, one can not overlook the importance of factors capable of increasing its power to the utmost. The secondary causes acquire, in practical life, a superior value and they are effectively united in the alcoholic with all the others; serious diseases, debility, debauches, useless fatigue, fatal physiological, moral, and pecuniary misery, defective hygiene, etc.—DR. LEGRAIN, Paris.

"The school is society shaping itself."

BOOK NOTICES

FAMILY GYMNASIUM, by R. T. Trall, M. D. Published by Fowler & Wells Co., New York, N. Y., (1857). Cloth. 215 pages. Price \$1.25.

A very complete compendium of physical exercises including general and special calisthenics with and without apparatus, and vocal gymnastics. Much of the material is valuable and the illustrations are profuse. If the cuts and general makeup of the book could be brought up to date it would add much to the attractiveness of the book.

EXPERIMENTAL PHYSIOLOGY AND ANATOMY, by Walter Hollis Eddy, chairman of the Department of Biology in High School of Commerce, New York City. American Book Company, New York. Cloth, 112 pages, with cuts and diagrams. Price, \$.60.

This book of concise directions for experimental work in physiology will be found helpful by high school teachers. Some of the experiments involve chemical tests, some microscopical observation, some the examination of prepared specimens of animal organisms, and others external observation of the body.

NATURAL SYSTEM OF ELOCUTION AND ORATORY, by Thos. A. Hyde, B. A., B. D., and Wm. Hyde, B. A., B. D. Fowler, Wells & Co., New York City. 653 Pages. Ill. Price, \$2.

This well bound, attractive volume is a unique and valuable contribution to the literature of this subject. Proceeding upon the principle that correct instruction in oratory, as well as successful public speaking, depends upon a knowledge of the human constitution, the authors give careful attention to analysis of character and a scheme for reading the same, and the influence which sentiment, emotion, and passion exert upon expression through voice and gesture. Other chapters cover the subject fully from the standpoint of elocution proper.

The whole furnishes a book of much interest to the teacher or general reader and one well nigh indispensable to the public speaker or elocutionist.

Pat—"How d'ye spell puppy, Dinnis?"

Dennis—"That's aisy. P-u-p, pup; P-y, py."

Pat—"Don't try to be funny. P wipy enade? There's no sich letter in the book as wipy." *Ex.*

We regret that the credit due the Central Vermont R. R. for the use of the beautiful cut on P. 39 of the Nov. JOURNAL was inadvertently omitted, and are pleased to acknowledge the courtesy at this time.

A RECHABITE VIEW

THE following from the *New Voice*, is a glimpse of Rechabite principles contained in a letter just addressed to the brothers and sisters of her order by Mrs. Mary F. Henderson, wife of Ex-United States Senator Henderson from Missouri:

Fellow Rechabites:

I see by the papers that a few members of our organization are advocating the canteen for our soldiery on the old plea that man must have alcoholic drink of some kind, and if he cannot have it, "respectably" will take to low dives.

Now railroad companies have already concluded that men who cannot get along without alcoholic drink of any kind are not wanted in their employ, much to the satisfaction of the traveling public. Other business organizations are rapidly coming to the same conclusion. For sanity of purpose, physical endurance, moral stamina, and general efficiency, the man who cannot get along without his alcoholic drink, is considered to be worth 75 per cent less than the man who is physically and mentally sound enough to not want a poison excitant.

Have you not read accounts of England's most important experiments inaugurated by Gen. Lord Roberts, Gen. Lord Woolseley, Gen. Lord Methuen, Gen. Sir Horatio Kitchner, Gen. Sir George White and others, to test the comparative efficiency of regiments with rations of strong spirits, regiments with rations of beer, and men allowed no alcoholic rations whatever with the happy result that the total abstinence army and navy of England now numbers 60,000 with a large majority of her leading officers also total abstainers? For those who lead and those who follow one pure-blooded sane-minded man is worth a dozen of the other sort, and it does not speak too well for the officers and men of our army who still advocate this school of drugging.

Germany is in this experimental stage strenuously taking lessons, and now as we see England and Germany trying to get rid of their canteens, we see our American officers clamoring for it. A comparative regard and disregard of hygienic principles in soldiery has been given the world in the late Japanese-Russian war. Our army being an arbitrary institution should be a school of physical culture rather than a school of degeneracy. It should be a school for physical, mental and moral athletics rather than a school for general worthlessness. The chief reliance to be put upon men who cannot get along without their alcoholic beverages is to fill our hospitals and pension lists, and if, to compose our army, our country has an insufficient number of sound men with no need of drugs let us be sure to keep out of war.

Our soldier boys, along with their parents, have more cause to fear the licensed canteen than bullets. Let them understand that no confirmed inebriate is made at once, but invariably has his beginnings; that the poison habit, however slight, feeds on itself.

We want the school of human degeneracy off the throne, and human vitality off the scaffold.

Of what use is it to be frantically dipping up consequences, with little regard for the turning off of faucets!

Very sincerely yours,

MARY F. HENDERSON.

ARE YOU A Primary-Kindergarten Teacher?



That is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the ONLY HOUSE IN THE U. S. putting up Kindergarten material especially for Primary Schools. If you will send for free catalogue now we will send you of charge instructions for using Kindergarten material in primary schools, the regular price being 25 cts. Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.

New Century Series OF Anatomy, Physiology and Hygiene

Oral Lesson Book in Hygiene.....	\$1.00
New Century Primer of Hygiene .....	.30
Intermediate Physiology and Hygiene..	.40
Elementary Anatomy, Physiology and Hygiene .....	.75
Anatomy, Physiology and Hygiene for High Schools	1.00

THE NEW CENTURY SERIES OF PHYSIOLOGY was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high-school; and for the fullness and accuracy of the treatment in regard to the nature and effects of alcoholic drink and other narcotics on the human system.

Send for Descriptive Circular.

American Book Company
NEW YORK CINCINNATI CHICAGO



DOES
40%
SAVING
INTEREST YOU

School Physiology Journal Club Offers

Every group must contain the SCHOOL PHYSIOLOGY JOURNAL. Magazines may be sent to different addresses. Subscriptions may be new or renewals. Many more combinations for the asking.

FAMILY GROUPS.

World's Work,	\$3.00	OUR PRICE \$3.25
McClure's,	1.00	
Delineator,	1.00	
Physiology Journal, . . . . .	.60
Review of Reviews,	\$3.00	OUR PRICE \$3.10
Woman's Home Companion,	1.00	
Success,	1.00	
Physiology Journal, . . . . .	.60
Review of Reviews,		OUR PRICE \$3.75
Any two of Class A,		
Any one of Class B,		
Physiology Journal,		

YOUNG FOLKS' GROUPS.

C. E. World,*	\$1.00	OUR PRICE \$2.40
Or Little Chronicle,	1.50	
Or American (Leslie's),	1.00	
American Boy,	1.00	
Our Little Folks (new),	1.00	
Or Success,	1.00	
Physiology Journal, . . . . .	.60
St. Nicholas,	\$3.00	OUR PRICE \$3.60
Any one of Class A,	1.00	
Physiology Journal, . . . . .	.60

TEACHER'S GROUP.

Normal Instructor,75	OUR PRICE \$1.50
Primary Plans,	1.00	
Physiology Journal, . . . . .	.60

FARM GROUPS.

Farming,	\$1.00	OUR PRICE \$2.00
American Farmer, . . . . .	.40
Reliable Poultry Journal, . . . . .	.50
Kimball's Dairy Farmer, . . . . .	.50
Art Portfolio (6 pictures),	1.00	
Physiology Journal,60	OUR PRICE \$2.00
Suburban Life,	\$1.50	
Farming (with \$1000 accident policy 1 year),	1.00	
Physiology Journal, . . . . .	.60

CLASS A.

C. E. World,*	\$1.00	Any 1 with JOURNAL \$1.10
Success,	1.00	
Woman's Home Companion,	1.00	
American (Leslie's),	1.00	Any 2 with JOURNAL \$1.75
Our Little Folks,	1.00	
American Motherhood,	1.00	
Primary Plans,	1.00	Any 3 with JOURNAL \$2.35
Teacher's World,	1.00	
Farming (with accident policy),	1.00	

CLASS B.

American Boy,	\$1.00	Any 1 with JOURNAL \$1.00
Everyday Housekeeping,	1.00	
Normal Instructor, . . . . .	.75
Designer,† . . . . .	.50

CLASS C.

Suburban Life,	\$1.50	Either with JOURNAL \$1.50
Little Chronicle,	1.50	

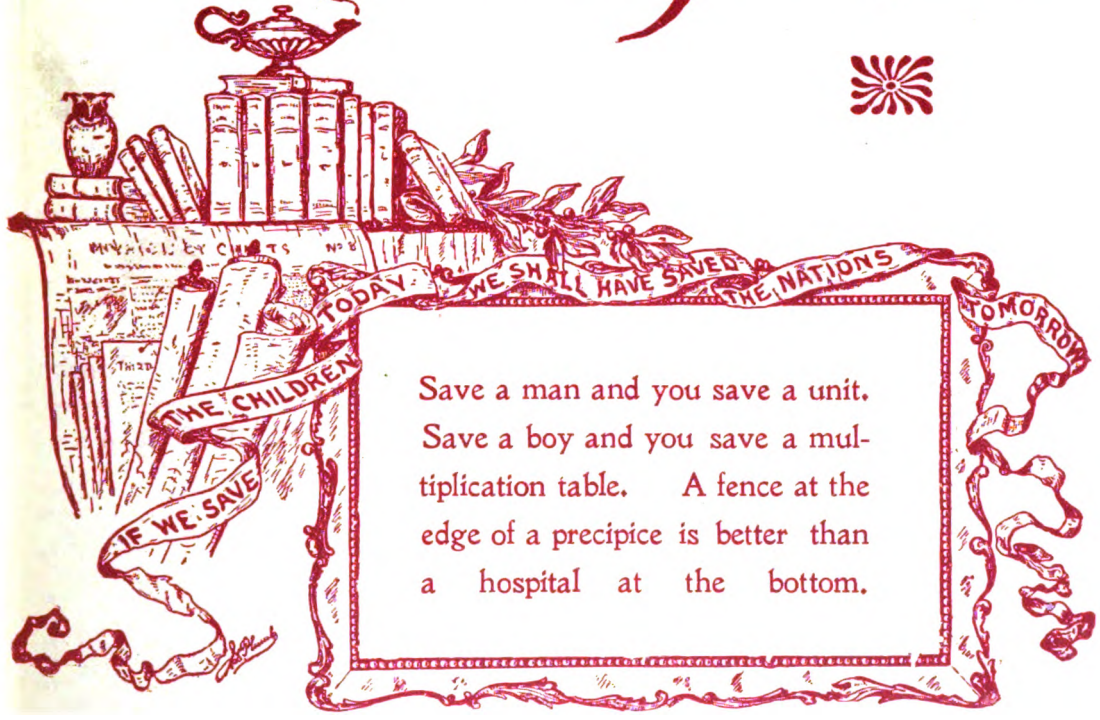
*Add 10 cents if this is chosen. †Less 10 cents if this is chosen.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Anti-Narcotic Number



THE SCHOOL PHYSIOLOGY JOURNAL



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVI. NO. 5
JANUARY, 1907

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid to any address on request.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.
\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

• CONTENTS •

	Page
Evils of the Cigarette	65
By Judge G. W. Stubbs	
Veritas Dicatur. By E. L. Transcau	67
Primary Lessons	
First Year—Rest and Sleep	70
Second Year—Table Manners	71
What the Apple Taught Margaret	72
Editorials	74
How Much is a Boy Worth?	74
The Schoolmaster's Example	
Does It Pay? By Henry A. Pattengill, B. Sc.	75
A Remedy Suggested by Lucy Page Gaston	75
A Word to the Cigaret Lad's Smoking Father	76
By H. Sterling Pomeroy, A. M., M. D.	
■ One Teacher's Method by Margaret Slattery	76
Intermediate Lesson—Fifth or Sixth Year—A Man or Slave	77

AN ATTRACTIVE OFFER

THE SCHOOL PHYSIOLOGY JOURNAL, (16th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "State Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET,

BOSTON MASS.

School Physiology Journal

Vol. XVI

BOSTON, JANUARY, 1907

No. 5

A Prayer for the New Year

"PURGE out of every heart the lurking grudge. Give us grace and strength to forbear and persevere. Offenders, give us the grace to accept and to forgive offenders. Forgetful ourselves, help us to bear cheerfully the forgetfulness of others. Give us courage and gaiety and the quiet mind. Spare us to our friends, soften us to our enemies. Bless us, if it may be, in all our innocent endeavors. If it may not, give us the strength to encounter that which is to come, that we may be brave in peril, constant in tribulation, temperate in wrath, and in all changes of fortune, and down to the gates of death, loyal and loving one to another."

R. L. Stevenson.

THE EVILS OF THE CIGARET

BY GEORGE W. STUBBS

Judge of the Indianapolis Juvenile Court

WHEN the Juvenile Court was established in Marion County (April, 1903) it had not appeared to me that the use of cigars by boys was much worse than the use of tobacco in other forms. True, I had frequently read in the newspapers about the baneful effects of the use of cigars in certain cases, but up to that time I had given the subject but little thought. Upon opening the Juvenile Court, boys were brought before me in such numbers that I set about discovering, if possible, the cause that led to their delinquency.

Since the court was established, I have had before me 1,540 boys and girls—mostly boys—all of whom have been charged with offenses against law. These charges have covered the entire list of offenses known to the law in Indiana from the most trivial misdemeanor to the greatest of crimes.

In inquiring into the causes that have brought about such a great increase in the number of offenses by boys against the law in the last few years, I have reached the conclusion that, aside from the frailties and weaknesses that afflict our common humanity and which are likely to blossom and develop into crime, especially where there is a lack of parental control, or

where the parents themselves belong to the ignorant or vicious classes, by far the most potent factor is the cigaret habit.

I had before me more than six hundred boys who were users of cigars, most of whom had become cigaret fiends; that is to say, they had been addicted to the habit so long that it had mastered them, and I have found that in nearly every case where the offense charged was of a grievous, criminal, or degrading and debasing nature the defendant was a user of cigars. I have taken the opinion of physicians and have examined into the subject myself until I have become convinced that the insidious poison of the cigaret is at the bottom of most of the trouble.

The cigaret fiend inhales the smoke and expels it through his nostrils. The poison is absorbed and finds its way into his blood. The boy whose bones are soft, whose nerves are weak and whose muscles have not yet developed, becomes addicted to the use of cigars with the result that he loses his vigor, his whole system being filled with lassitude somewhat similar to the effect of morphine or cocaine on a grown person. Such a boy, being without vitality, loses his ambition, without which a boy never

amounts to anything. He falls behind in his school work, if he is in school, with the result that he quits school too soon; he loses his job if he is put to work, for the reason that he has not the strength or vitality to do the work that the normal boy ought easily to do. As his system becomes depleted the affection reaches his heart and brain, and the baneful effects of the malady soon become apparent to all. Such a boy in time becomes a loafer.

In the Juvenile Court I have found that manliness and good conduct can be aroused and stimulated in boys, no matter what the offense of which they have been guilty, if only they are not cigaret fiends. When a boy has become addicted to the use of cigalets the disease is in his blood and brain; his moral fiber is gone; he becomes apathetic, listless and indifferent; his vitality has been sapped away, and all the vigor that should characterize the normal boy is gone.

We have found that we have but small chance to reform and help the cigaret fiend unless the habit can be broken. It is a fight with the boys' appetite which, like the burning thirst of the inebriate, rarely listens to moral suasion, and when a boy is in this condition he easily drifts into crime.

A boy like all other human beings has a dual nature. I may shock sociologists somewhat, but I have come to believe that if the better part of a boy is stunted in its growth, the baser side will develop the more rapidly. He is a growing being and must develop along some line; and if his moral and intellectual faculties are dulled or deadened, the immoral and vicious elements that exist in us all will come to the surface and will blossom and develop into crime.

It is well known that there is the taint of savagery in most of us, and though it is smothered and kept down by civilization, education and the influences of our blessed Christian religion, yet let these be deadened and how easily we drift into vice and crime. The boy with his immature and growing body, his tender nerves, his undeveloped muscles and his childish brain, whose better side—the intellectual and moral side—has become dulled and deadened and whose baser qualities prevail, must have help if these evil influences are to be put behind him. Otherwise they will take possession of him and dominate his whole life. The cigaret fiend's appetite gets beyond his control, his ambition is gone and his vitality goes with it, and as all his better self is being destroyed, the vicious and baser part of him is being stimulated and developed.

Something must be done to save the youth of our land, or in a few short years the whole body politic will become diseased and dissolute. For

moral degradation there is no reviving spring. Let the boys of our country become corrupted and their manliness destroyed, the hope of the nation poisoned at its fountain head, and the abomination of desolation spoken of by Daniel will be upon us.

I am not a pessimist. Let this horrible vice be throttled before it gets beyond the nation's control—let it be wiped out and destroyed.

Men who oppose legislation prohibiting the use of cigalets base their opposition upon the point that it interferes with their personal liberty, but they ignore the fact that all such legislation is intended to save boys from ruin. They ignore the further fact that most states, including Indiana, have for years had laws prohibiting the sale of cigalets to boys. They also ignore the fact that such laws never have been and never can be enforced for the reason that as long as it is lawful for men to buy and smoke cigalets the boys can and do find ways to get them.

Such men seem to be anxious to preserve their "personal liberty" even if thousands of young boys are destroyed.

The point to which the attention of the authorities and of the public should be directed and held is that the injury comes from the boys' inhaling the smoke, taking it into the lungs, and exhaling it through the nostrils, thus leaving the poison in the system. If the cigaret is made of paper that is not medicated, and if the tobacco in it is pure and mild and free from drugs, still the nicotine that is in all tobacco gets into the blood, and the poison is carried to the brain and permeates the entire system.—*From an address before the Indiana State Teachers' Association, December 30, 1904.*



GOOD-BYE OLD YEAR

BY LYDIA AVERY COONLEY

The Christmas day came dressed in green,
The New Year dressed in white;
The blue lake smiled upon them both,
To watch the sun's delight.

The birds flew swift across the sky;
"Come, New Year! Old Year, Go!
We say good bye to flush of green,
And hail the drifts of snow.

We greet you both with smile and sigh—
When New Years come, Old Years must fly!
And so, Old Year, good-bye, good-bye.

**"Go boldly, go serenely, go augustly—
What can withstand thee then?"**

VERITAS DICATUR

BY EMMA L. TRANSEAU

NOT long ago a young Esculapius came out in a medical journal with a flourish of striking rhetoric, charging that certain statements about tobacco in one of the school physiologies were "big lies." An unsuspecting British medical journal, imbued, perhaps, with the growing respect for things American that is said to be now fashionable in England, has since copied a large part of these charges, which must naturally bring down discredit upon some one. The question, Upon whom? however, is less important than the question, Which is correct, the statements that are being taught the children, or the charges of the young (1902) medical graduate.

TOBACCO AS A NARCOTIC

The first statement challenged is, "Tobacco, a powerful narcotic, contains a substance called nicotine." Our young doctor says, "Tobacco is not a narcotic." But "Taylor's Treatise on Poisons," a standard court room authority which is probably on the library shelves of most medical schools, says, "There can be little doubt that many dyspeptic as well as nervous disorders proceed from the inordinate use of tobacco in smoking, but the lovers of the *narcotic*, whether medical or non-medical, will never admit it."

Elsewhere, reporting the death of an infant poisoned by tobacco placed in its mouth, the same author says, "The infant was completely *narcotised* and died on the following day."

Possibly Dr. Taylor, having been regarded as an authority so long, may be supposed antiquated, but a new two-volume, "Text-book of Legal Medicine and of Toxicology," issued in 1904, from the pens of professors in Columbia University, Rush Medical College, and the University of Chicago, says, "Tobacco owes its *narcotic* and poisonous power, also its chief means of identification to the volatile and odorous alka-

loid, nicotine." Again, speaking of cigarets these authors say, that no "foreign narcotic" was found in them.

Dr. Chas L. Aldrich, Lecturer in the Cleveland College of Physicians and Surgeons, says, "Tobacco is an acro-narcotic poison." And it was our celebrated poet, who first became a celebrated physician, Dr. Oliver Wendell Holmes, who said, "The stain of the revery-breeding narcotic strikes deeper than we think."



"The young and untried year is at the gate.
Subtle with hope and full of prophecies."

THE FATAL DOSE OF NICOTINE

Another statement which our doctor-critic fearlessly labels, "big lie" is, "A single drop (of nicotine) if put on the tongue of a dog will soon kill the animal." The critic says, "It will not," and there leaves it, pitting his unsupported assertion against the book known to pharmacists as "The Drug Bible," the "The United States Dispensatory," which says, "A drop of it (nicotine) in a state of concentrated solution, is sufficient to destroy a dog, and small birds perish at the approach of a tube containing it." Reese's "Medical Jurisprudence" cites an experiment by Prof. Wormley in which one drop of nicotine killed a cat in 78 seconds. Dr. Alfred Swain Taylor says he found that a drop of nicotine killed a rabbit in three and one-half minutes.

The critic hurls his "big lie" epithet also at the statement that "An ordinary cigar contains nicotine enough to kill two men, if taken pure." An accomodating druggist, appealed to for aid on this point, weighed on his scales what he considered two ordinary cigars, one a five, one

a ten-cent variety. The five-cent one weighed 115 grains, the ten-cent one, 106 grains.

Peterson and Haines' "Text-book of Legal Medicine and Toxicology" says that tobacco contains from 1.5 to 4.5 per cent of nicotine, and that one grain of nicotine is about the smallest fatal dose for an adult. Taking everything at the minimum, the smallest percentage of nicotine and the lighter of the two cigars, we would

have 1.59 grains of nicotine, which would be over a half more than the smallest fatal dose. But with an average of the maximum and minimum percentage of nicotine in tobacco, and the weight of the ordinary five-cent cigar we will have 3.4 grains, which, divided between two men would give each 1.7 grains, over a third more than the smallest fatal dose.

The school physiology in question carefully follows the quoted statement with the explanation that the smoker does not get all of the nicotine in the cigar, only a little of it.

CIGARETS

Our young medical critic denies the truth of several statements made in these books about cigars. One statement is that the cigar is "one of the worst possible preparations of tobacco;" another that "it sends more poisonous fumes into the delicate air cells of the lungs than a pipe or cigar would do." He says, apparently placing a much narrower interpretation upon the text than the sense requires, "They are only one-fifth as strong as a pipe, and one-tenth as strong as the average cigar." The question here is not so much what is in them, as what the smoker gets out of them.

Dr. Chas. L. Aldrich, previously quoted, contrasting the amount of smoke absorbed by the pipe or cigar smoker with that taken in by the cigar smoker, says, "The cigar smoker, on the contrary, draws great volumes of the smoke deep into his lungs, holds it there some little time until a large part of its nicotine is absorbed, and then expels it in a cloud from the mouth and nose."

Sir Lauder Brunton adds to this that absorption occurs very rapidly from the mucous membrane of the lungs, and says, "There is another reason, however, why cigar smoking is frequently more harmful than smoking a pipe or cigar, and it is that cigars are small and can be smoked in a few minutes, so that many more are consumed in the course of the day than would correspond to pipe or cigar, and the total quantity of tobacco used is thus greater in the form of cigars."

Dr. J. C. Mulhall, a throat specialist of St. Louis, in a paper on "The Cigaret Habit" read before the seventeenth annual congress of the American Laryngological Association and reported in the *New York Medical Journal* (Nov. 30, 1895) said: "All real devotees of the cigaret inhale . . . In ordinary smoking, the mouth alone is the smoke chamber, but when one inhales one must add to the mouth the mucous membrane of the larynx, windpipe and larger bronchi. There is, hence, roughly speaking, three times as much surface for the absorption of nicotine, and consequently, though a cigar

contains vastly more nicotine, three-fourths of it is wasted, as far as the question of nicotine intoxication is concerned, as compared with the cigaret.

"Moreover, the cigaret smoker consumes two or three while the cigar smoker consumes one. The puny cigaret is, therefore, not so weak as it appears and with this explanation begins to appear worthy of the newspaper term 'deadly.' Again, the cigar smoker, as compared with the cigaret smoker, is an infrequent consumer. We know that with most drugs if we divide an ordinary dose into ten equal parts, and give one part every ten minutes until the ten parts are taken, we get a more powerful effect than if the whole were given at one dose. So it is with cigars. The dose of nicotine is smaller, but the doses are much more frequently repeated. The evil symptoms (of cigaret smoking) are always those of nicotine poisoning. The only narcotic present is nicotine. It being admitted that the use of tobacco is a great evil in the young, it follows as a self-evident proposition that any method which encourages its use must be more reprehensible than a method which discourages its use, and the cigaret above all other methods presents this encouragement to the use of tobacco. In its mildness, is concealed its very capacity for doing harm, for the reason that it teaches the use of tobacco."

HOW TOBACCO LEADS TO DRINK

Falsity is charged also upon the statement that, "Drinking men are almost always smokers or chewers, and many a drunkard owes his ruined life and happiness to the appetite for narcotics formed by the use of tobacco and the company into which it led him." The space it would take to quote the numerous medical authorities who assert that smoking tobacco does lead to drinking alcoholic liquors can perhaps be more effectively given to a few of their explanations as to the reason for this.

Dr. Allen T. Haight, M. D., Professor of Ophthalmology, Chicago Clinical School, Attending Eye and Ear Surgeon to Cook County Hospital, said, in the *Chicago Clinic*, (March, 1899): "It is the ammonia [in the tobacco smoke] that bites the tongue after long smoking and also makes the smoker's throat so dry, causing him to drink freely."

Dr. E. Stuver, President of the Wyoming Scientific College, also enumerates among the deleterious substances in tobacco smoke, "ammonia, which bites the tongue, makes the mouth and throat dry, and induces thirst thereby causing the smoker to drink freely."

Dr. R. Martin, of Manchester, England, said, in the *Lancet* (Dec. 1, 1900): The fumes of

burning tobacco dry and irritate the fauces, exciting thirst, hence drinking and smoking generally are associated."

THE EFFECT UPON THE HEART

"Irregularity of the pulse may rarely be attributed to tobacco," says this critic, but a professor in the University from which he graduated, Prof. H. Newell Martin, said, that habitual smokers "often suffer from palpitation of the heart and from intermittent pulse." Sir Lauder Brunton, Physician to King's College Hospital London, says that when he was house physician he met very frequently irregularity of the heart from tobacco smoking."

Dr. F. D. Maine, in the New York Medical News (Vol. LXXXI, p. 150) says of the effect of tobacco upon the muscles supplying the vital organs: "Proof of this indirect invasion I have frequently observed in the congestive cough and dyspeptic symptoms, more or less manifest, seen in connection with well-pro-nounced tobacco heart. The characteristic signs of the latter are more than the rapidity of its strokes, nervous palpitation and waste of force, irritability being always present."

USE THROUGH A LONG LIFE

The critic asserts that "The majority of smokers use tobacco moderately for many years and suffer no ill effects." If he had said "and think that they suffer no ill effects," his statement might be granted, for, as Dr. Alfred Swaine Taylor, says in his Treatise on Poisons: "A poisonous substance like tobacco, whether in powder, juice or vapor, cannot be brought frequently in contact with an absorbing surface like mucous membrane, without in many cases producing disorder of the system, which the consumer is probably quite ready to attribute to any other cause than that which would render it necessary for him to deprive himself of what he considers not merely a luxury, but an article actually necessary to his existence."

Dr. F. Robbins, in the Medical News (Aug. 26, 1905), tells of two smokers who used tobacco a good many years without realizing any bad effects, but when "additional noxious influences" supervened, a "failing of nervous vitality came to the front."

The weakness of the "long life" argument is plain when one considers how long some people exist in very unsanitary conditions and the numbers who escape from such without actual sickness or loss of health.

There is already abundant scientific evidence to show the danger of indulgence in tobacco, a danger the results of which tend to become cumulative in each succeeding generation.

In the face of the unquestioned harm being done boys and youths by the use of cigarets and other forms of tobacco, the situation demands a thoughtful, conscientious weighing of evidence, and study of the best methods of preventing a continuance of the evil.

SNOW FLOWERS

"Whirling and dancing in mazes dizzy,

All night long the snowflakes were busy—

Busy as bees are busy in clover,
And bees are busy the wide world over.

Tired little snowflakes, in shy, soft masses,

Resting on twigs and branches and grasses,

Wee Dorothy watching it in surprise,

Babyhood's wonder in her eyes.



"With feathery wreaths the forest is bound,
And the hills are with glistening diadems crown'd;
'Tis the fairest scene we can have below,
Sing welcome, then, to the drifting snow." *

Looking out on the world so white,
Wi-e with a wisdom out of our sight,

Baby settles it all in a minute—

"'It's winter's garden wif snow-flowers in it.'"

Editor School Physiology Journal—Replying to your favor of recent date will say that we do refuse to hire men whose hands indicate that they are inveterate users of cigarets. I find that the confirmed user of cigarets is generally worthless to us as a fireman; usually because he can not stand the work. Again we find that men who are confirmed users of cigarets almost invariably fail to pass the eye test for perfect vision. I have about 1300 men under my control but I do not think there are very many confirmed cigaret smokers among them.—L. C. TODD, Master Mechanic Fitchburg Division, Boston & Maine R. R.

*Courtesy of Suburban Life.



REST AND SLEEP

WHETHER is on the street at night can but be disagreeably surprised at the sight of the many children who play there till nine or ten o'clock. Children who have been up late are listless, dull, and fretful. It is almost impossible to hold their attention.

The physical ills which assail the child as a result of late hours are soon followed by other evils. Boys and girls who are allowed to go where they please and stay out as late as they please soon slip from all authority. They usually associate with those who are older and who have gone farther along the path of evil, and they are quite likely to follow in their steps.

What more favorable time to learn to smoke cigars than after dark? Even the first grade is not too early to begin the crusade against such things. The old proverb "an ounce of prevention is worth a pound of cure" can not find better application than just at this point.

STORY

James and Charles were playing "Fire."

James sounded the alarm on a bell which he found in the house, and then both ran as hard as they could to the fire. Rover was interested and raced along too.

When they reached the fire—only a bonfire which the gardener had started to get rid of the old leaves—they turned the hose on it.

They worked very hard, Rover and all. Then after the fire was out, and everything safe they ran home. Rover lay down on the grass and James and Charles threw themselves down on the steps.

Why was Rover glad to lie down and why did James and Charles sit on the steps?

After exercise rest is needed.

HOW WE REST

When you have been sitting at your desk writing for some time, how do you feel? What

do you like to do next? You like to walk about, or work at the board, do you not? That rests you. We often rest by changing our work. After sitting still and working, we need to move, or to exercise.

Suppose it is night, and you have worked and played all day. How do your eyes feel? If you sit still in your chair a few moments what happens to you? Every night we must rest by sleeping. We could not live very long without sleep.

When does kitty sleep? When do the birds sleep? Where do they sleep?

How about the flowers—have you ever noticed the dandelion at night, or the lily? The birds and flowers go to sleep early.

"EARLY TO BED"

When you have worked and played all day what do you need when night comes? What time do the birds go to bed? Little children should not stay up much later than the birds.

Grace's mother had company one evening and Grace begged to sit up, just that once. She always went to bed at seven o'clock, but this night she said she was not a bit tired. So her mother said, "you may stay up a while to-night."

There was noise and much fun, and it was ten o'clock before Grace went to bed. "Oh! I've had such a nice time," she said, "why can't I sit up every night?" But her mother answered, "Wait till tomorrow."

Sure enough, when it was time to get up next morning, Grace did not feel at all like it. She was tired and cross. Her mother had to call her three times, and even then she was so slow dressing that she was late for school.

All day in school things went wrong. She could not do her work, and she did not enjoy playing at recess. When bedtime came she said, "I don't want to sit up late tonight. I'm so tired."

The evening comes, the daylight flies,

The little birds are in their nest,

The pretty flowers have shut their eyes,

'Tis time for me to go to rest.

GETTING READY FOR BED

When evening comes what do you do first to prepare for bed? What must be done to dirty face and hands? It is a fine thing to have a bath before going to bed.

What ought you to do with your clothes? Do not leave them in a heap on the floor, but shake each garment and hang it up over a chair. Then it will be nicely aired by morning.

When the birds sleep, do they go into a house? They sleep out of doors and have the pure fresh air to breathe. We do not sleep out of

doors. How can we get fresh air? Even in winter you should leave a window open two or three inches at the top and bottom.

What do you wear to bed? You should have different clothes for day and night. What should you do in the morning with the night clothes.

After a long night's sleep, how do you feel when you wake in the morning? If you do not get sleep enough you will be tired and cross, but if you do, you will feel rested and ready to begin the new day—to get up early like the birds and squirrels. See if you ever find them asleep in the morning.

SENTENCES

The kitten has — a long time.

She is very —.

She will go to

—.
The little boy
is —.

He must go to
— early.

MY BED IS A BOAT

BY ROBERT L.
STEVENSON

My bed is like a
little boat ;
Nurse helps me
in when I
embark ;
She girds me in
my sailor's
coat
And starts me
in the dark.



Entertaining in the country.*

At night, I go on board and say
Good night to all my friends on shore ;
I shut my eyes and sail away
And see and hear no more.

All night across the dark we steer ;
But when the day returns at last,
Safe in my room, beside the pier,
I find my vessel fast.

Selected.

A birdie with a yellow bill
Hopped upon my window sill,
Cocked shining eye and said,
"Aren't you 'shamed, you sleepy-head?"

—R. L. STEVENSON.

*Courtesy of *Suburban Life*.

SECOND YEAR

TABLE MANNERS

AMONG the many necessary things to be taught the young child, table manners should receive due attention.

As a rule, one sees poorer table manners among men than among women. The boy often leaves home at an early age, secures a cheap boarding place from necessity, rises in the commercial or professional world, is finally admitted to what is called good society. He has left his homespun clothing behind him ; but he does not always free himself from his awkward table manners. Habit is strong, and he says, "I am too old to change."

Shall we not do what we can for our growing boys and girls in this particular?

SETTING THE TABLE

If possible, have a few toy plates, etc., and a table. Call upon a little girl to set the table. Then ask a boy to try. It would be well to have the table laid occasionally, until all have mastered the art.

We may not see the result, but the table in some careless home will take on a look of order and attractiveness hith-

erto unknown.

WHAT TO DO AT THE TABLE

Mary has set the table very neatly.

We will play there is a child at each place. What shall they do with their napkins when they are ready to eat? A napkin keeps crumbs from our clothes and the floor.

Who will come and show these play children how to hold a spoon, a knife and a fork? how to hold a cup or mug? how to drink? how to pass a plate?

Speak of the importance of chewing the food thoroughly, of not talking or drinking when the mouth is full.

Who will show us how to fold the napkin? how to leave the knife, fork and spoon? where to leave the chair?

Teach the children the correct position in sitting at the table. Tell them that food does us much more good if we talk of pleasant things at the table, and speak kindly to each other.

After discussing the question of what should and should not be done at the table, formulate several simple rules and write them on the black-board. Let the children copy the rules in little notebooks which they can easily make for themselves, and use similarly for all notes given them in their hygiene lessons. Make the lesson an exercise in writing and language as well as a health lesson.

PHILEMON AND BAUCIS

A STORY

Years ago, when people lived out of doors much of the time, they noticed the wonderful and beautiful things about them and liked to make up a story to show how things came to be as they are.

When they saw the stripes on the chipmunk's back they told a story to show how they came there. When they saw the red breast of the robin, they told how he got it.

One day, some one saw two trees, an oak and a linden, standing side by side, so near each other that their branches touched. This was the story that was written to show how these trees happened to be there.

These people believed there were many gods and goddesses who could do wonderful things. One of these gods whose name was Zeus had sent word that he was coming to a little village to visit the people. He said he should bring a friend with him.

As soon as the people heard this, they began to make everything beautiful for Zeus and his friend. They prepared a great feast for them. Then they went out to watch for their guests who, they thought, would come in a golden chariot drawn by white horses.

At night, two beggars came to the village. They asked at every home for something to eat and a place to sleep, but at each house, the people said, "Go away. We are saving our good food and clean beds for Zeus and his friend." Nowhere in the village could they find a place to sleep. There was a hill near the village, at the top of which stood a little hut. Two old people, Philemon and his wife, Baucis, lived there. They hoped Zeus might visit them, and had eaten but little for several days in order to have enough food to give him if he came.

When the beggars reached their hut and asked for food, Baucis spread her one white tablecloth upon the table which she set neatly, and gave them bacon and herbs, milk and wild honey. This was all she had.

As soon as the strangers touched the dishes, what do you think happened? The dishes turned to gold. The milk in the pitcher turned to rich syrup.

When Philemon and Baucis saw this, they fell upon their knees. They knew the beggars must be Zeus and his friend.

Zeus told Philemon and Baucis that because they had made him and his friend welcome and had given them the best they had, he would give them whatever they most wished for.

Philemon and Baucis spoke at once and said, "Neither of us wishes to outlive the other. Let us both die at the same time."

Zeus smiled. He changed their poor hut to a beautiful castle, and they had many happy years of life together.

One morning people saw that the castle had disappeared. When they visited the spot they found two beautiful trees growing, an oak and a linden. The good couple were not to be found.

It seemed to people who rested under these trees in the years that followed that the trees whispered to each other, and they came to believe that Philemon and Baucis lived in the form of trees and that Zeus protected them.

Did Philemon and Baucis have rich food to offer Zeus?

What wholesome drink did they give their guests?

Close your eyes and try to see their clean table.

What kind of manners did they have?



WHAT THE APPLE TAUGHT MARGARET

BIG Brother lived in the house where the horse chestnut grew in the garden and he belonged to little Margaret who loved him very dearly.

Margaret was a lovely little girl but she had one serious fault, a bad temper, which she had never tried very hard to overcome.

One beautiful day in June, she did not want to wear the gingham dress Mamma had chosen for her, and stamping her foot said angrily, "I won't wear that horrid dress, Mamma! I wish to wear my pretty white one with ruffles."

She was ashamed afterwards, and told her mother how sorry she was, but Mamma shook her head sadly and said, "I did want my little girl to grow up to be a lovely and good woman, but she never will, she never can, if she lets her bad temper get the mastery again and again!"

"Yes I will, Mamma," Margaret had said, "I shall be a lovely woman when I grow big like you. It doesn't matter for a little girl to be angry, Mamma, but when I am big I can and will be like you!"

Big Brother stood in the door and looked at her so sadly that she was glad when he said to her, "Come with me, Dot, and we will look at the apples on our tree."

Margaret was pleased to go and quite forgot how cross and unhappy she had been, as he showed her the apples.

Taking the tiny gold pin which she wore at her throat, he said, "See, Dot, I'll write your name with this on this apple—I believe it is the finest on the tree."

"Oh, Big Brother, I can scarcely see that it is writing at all—just the tiniest little scratches on the green skin of the apple! I have to turn it every way to read the letters!" she cried; and the Big Brother answered, "Well, never mind. Let's talk a little while!"

Then he told her how it grieved them all to see her face grow hot and red, and to hear rude, fierce words from their little Margaret.

And then he spoke of her growing just as the apples grow, and told her how he had hoped to see her changing to be a good, gentle little girl.

Dear Margaret! She *meant* to try. But she forgot so many times! One morning she had been so unkind to her little dog that her mother had sent her out alone to stay for a while. Here Big Brother found her, and guessed the secret of her sad little face.

"Come, Dot," he said, "I want you to see the apples on our tree—big and ripe they are! I've been watching them grow for a long time."

"There now," the Big Brother was saying, "see how big they have been growing for you all summer!" and he dropped down a great golden one.

Margaret caught it with a cry of delight which changed to one of surprise, for she could scarcely believe her eyes:—

Could it be? Yes, there it was—her own name—"Margaret," in wide, brown letters, grown right into the apple itself, the long name reaching quite around it.

"Big Brother," she asked, "How did my name come in the apple? It looks as though it grew there. *Did* it really grow there?"

"Yes, it grew there," he answered gravely.

"But *how* could it *get* there?" she urged.

"Do you remember," he said, "the day we came out to see the young apples growing—the day you were so angry about wearing your gingham dress?"

"Yes, Go on," she said hastily.

"Do you remember that I scratched your name with a pin on one of the little apples?"

"I do," said Margaret. "Little tiny letters they were! I could hardly see them. But what has that to do with these letters? These are big and wide, and look like scars on the apple—ugly and brown."

"But, dear, these scars are the same marks that I made that day," said Big Brother.

"The same marks?" Her eyes grew wide.

"Yes, the same, for the apple, you know, has been growing."

"Ah!" Margaret was silent for a moment.

"Big Brother," she said at last, "you mean the marks in the apple grew, too, just as the apple grew?" She spoke slowly, turning the apple in her hands.

Suddenly she looked up, with tears in her brown eyes, and threw her arms about Big Brother's neck.

"Big Brother," she said, and her voice quivered, "I will be good. I don't want my bad temper to grow too, as I grow. I will



"One beautiful day in June she did not want to wear the gingham dress Mamma had chosen for her."

try."

And Big Brother taking his little sister in his arms, kissed her, and said, "This time I am sure you will try."—"Our Little Folks."

NOTE:—Teachers in the lower grades can easily adapt the above story for use in teaching anti-cigarette truths. Lead the class to see the value of self-control and how the lack of it in childhood leads to the formation of bad habits which develop with growth.

TURNING NEW LEAVES

"Now, what is that noise?" said the glad New Year, "Now, what is that singular sound I hear?"

As if all the paper in all the world Were rattled and shaken and twisted and twirled."

"Oh, that," said the jolly old Earth, "is the noise Of all my children, both girls and boys, A-turning over their leaves so new, And all to do honor, New Year, to you."—*Ex.*

School Physiology Journal

COPYRIGHT APPLIED FOR

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, B. A., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"The Christmas moon rides bravely in the skies,
The young and untried year is at the gate.
We tremble at his aspect grave with fate,
At his inscrutable, unsmiling eyes,
Subtle with hope and full of prophecies.
Lord, he is all unknown, but Thou art true,
As in the old year, guide us in the new."

HOW MUCH IS A BOY WORTH

STATISTICIANS not infrequently amuse themselves and interest a curious public by computing the actual value of a boy in dollars and cents on the basis of the economic cost of rearing him.

There is, however, another cost which can never be set down by exact science. Parental devotion and self-sacrifice are terms which can not be interpreted even by the algebraic "unknown quantity."

Measured in this way a boy becomes infinitely precious. Into his very being his parents have put of themselves. To rear him, they have cheerfully sacrificed their own comfort, pleasures and recreation, have redoubled their daily toil, finding compensation in the joy of his development, his interests, and constantly manifesting possibilities. How much is that boy worth? Answer the question if you can, but know that on the table of his parents' heart the sum is written in figures which none but they can read.

VIEWED from this standpoint, the annual sacrifice of boy life and manhood's potentialities which goes up in the smoke of the cigaret becomes unspeakably dreadful. The yearly Athenian tribute to the Minotaur of fourteen youths and maidens was a mere triviality in comparison. The parents of Athens had, at least, the satisfaction of knowing that the sacrifice of their children was of service to the nation. The cigaret Minotaur makes no such

modest demands, offers no such compensation but cries, Give me your children's bodies, give me their minds, their moral sense and wills, and when you have given me all, your reward shall be—a call for more. In the face of this great, subtle danger, the instinct of every parent, of every man and woman who has the heart, if not the gift, of parenthood, rebels against this useless sacrifice.

How much is a boy worth? Your answer may be the measure of effort you are making to save him or your neighbor's boy from destruction by the cigaret. Teach him the dangers in its use. Set him the example of abstinence, for, having sacrificed so much already to bring him toward manhood the mere abstinence for example's sake by parent or teacher from a habit of physical gratification is a trivial sacrifice; let him understand you expect him to keep himself free from debasing habits; train him to think it manly to dare to say, No, to temptation; fill his time with such useful and enjoyable employments that he will not have time for the loafing which is the active handmaiden of the cigaret. "Only reason any boy ever got off the track," says one wise woman, "is just cause his folks didn't care enough, or didn't have gumption enough, to keep him lookin' forward to something all the time."

How much is a boy worth? Worth saving at all costs.

THE SCHOOLMASTER'S EXAMPLE

An experienced teacher said recently that the greatest difficulty in the way of teaching boys not to smoke is that they see their masters do it. Their fathers and their masters smoke and why should not they, is the boys' logic. They do not see that any harm comes from it.

Telling them they must wait until they are grown, is talking against nature, for it is the instinct of the young to ape their elders. If we could annihilate in their minds the idea that they look big and like a man when they are puffing tobacco smoke, like their fathers and uncles and teachers and their older male acquaintances generally, the cigaret problem would be solved.

The imitative instinct of boy nature puts the schoolmaster who smokes in a definite position which he can not avoid. He is indulging himself in a habit which tempts his boy pupils to dwarf their minds and bodies by following his example.

If he says he sees no reason why he should deny himself a gratification because it may induce some of his boys to smoke and be injured

thereby, his case is still worse. The most charitable interpretation of his position then is that his narcotic has deadened the moral sensibilities with which nature endowed him.

If he says he would like to give up his habit but cannot, one can pity him, but the more capable and respected he is otherwise as a teacher, the more dangerous he is to his pupils.

The men teachers of this generation may never have the opportunity of proving their patriotism by laying down the pointer and shouldering the musket; but they have an opportunity of fighting that time-old conqueror of civilization,—degeneration of character—by throwing away the pipe or cigar and standing out before their pupils in their rightful place, that of pattern, as well as guide and inspirer of the young.

DOES IT PAY

BY HENRY R. PATTENGILL

Ex-Superintendent of Public Instruction in Michigan.

SINCE Professors W. B. Pillsbury and W. P. Lombard of Ann Arbor made their attack in the State Teachers' Association on temperance teaching in the public schools, the writer has visited fully 75 rural and village schools in three widely separated counties in Michigan. In more than half of these schools he took advantage of the opportunity to question the pupils on physiology and hygiene.

The results are beyond his fondest expectations. In every school save two, the pupils manifested a surprisingly accurate knowledge concerning food, digestion, assimilation, respiration, circulation, the care of eyes, ears, teeth; the injurious effects of alcoholic drinks, narcotics, and the like. In no branch of school studies had the work been done better, more sensibly or more thoroughly. We are greatly pleased over the results of the test. We don't wonder that the liquor interests are beginning to feel the effects of this excellent work. The ratio of consumption of liquor in this country has not increased in proportion to our population. Little wonder that they wish to bring discredit on the temperance teaching, and try to offset it by skilfully worded advertisements trying to create the impression that alcoholic drinks have a food value. Our text books in physiology and hygiene are nearly all candid, conservative, and accurate in their treatment of the subject.

The learned Ann Arbor physicians referred to above base their puny arguments on too narrow premises. One of them would not teach the ill effects of the tobacco habit because of the effect it would have on the child

to see his father using the weed. This argument would have us refrain from teaching truthfulness to the children of liars, honesty to the progeny of thieves, clean speech to children of foul-mouthed fathers.

If the professors in our University will teach by precept and practice some of these wholesome lessons they take such pains to condemn, they will better repay the state for the salaries they get.—*Moderator-Topics*.

A REMEDY SUGGESTED

BY LUCY PAGE GASTON

National Superintendent Anti-Cigaret League.

HHEAD knowledge is not enough, there must be heart interest to insure a life of soberness. Both the intellect and the emotions must be reached when life habits are being formed.

Now that scientific temperance instruction is required by law and Mrs. Hunt and her helpers have solved the problem of how to teach the vital truths, the problem still remains, how shall the child who knows, be influenced to realize in his own life the ideal for which we are all working.

How can he be made an abstainer from intoxicants and tobacco, the king evil in the life of many of our public school boys.

To accomplish this in very many cases, it is necessary for the boy's own protection to have him voluntarily pledge himself to abstinence; to have some great inspiration come into his life which will cause him, in a strong heroic hour in his life's experience, to take a stand which will protect him in his weaker moments when temptations gather thickly about him.

Fortunately, a boy has a very high sense of honor and the ordinary boy who makes a pledge upon his honor in good faith and seriousness can be depended upon to keep it in the face of the sorest temptations.

Many boys have told me that cigars and tobacco are no longer a temptation when they have settled the matter once for all. "Why don't you smoke, too?" I asked a young fellow of twenty when all around him were others smoking.

"There's nothing in it. I used to smoke, but I cut it out six years ago, and now I never think anything about it." Instead of wishing to indulge, many a boy looks upon his friends who smoke with absolute pity and thanks God that he is not a slave to the habit.

A student in a great university said in my hearing recently, "Many of us have naturally weak wills, but if we have good habits we can get along all right. Every time the question of drinking or smoking comes up, we don't have

to exert our will power for we have the habit of letting these things alone." There was good philosophy underlying his reasoning. It is for us to help boys and girls in the habit of abstinence so that always and everywhere they will easily and naturally line up on the right side. The Anti-Cigaret League is being blessed of God in solving not only of the cigaret and tobacco problem but also that of drink in many schools.

If the noble work being done in certain schools I might name could be duplicated in the schools all over the nation, the next generation would show a vast decrease in intemperance, and we should have a race of men and women whose good habits would soon put out of business the breweries, and tobacco factories.

Information furnished free by National Anti-Cigaret League, 1119 Woman's Temple, Chicago.

A WORD TO THE CIGARET LAD'S SMOKING FATHER

BY H. STERLING POMEROY, A. M., M. D.

We are doing what we can to save your son. Our array of facts and our earnest appeals may have some influence with him; but all of them together, even with your precepts added, will be as the small dust of the balance *against his father's example*.

"But I have smoked for twenty-five years, and am sound as a nut physically and mentally," I hear you reply. Well, that may be true; you are an exception; you had an unusually fine constitution to start with; you did not begin the use of tobacco before you had nearly or quite reached maturity; you have smoked in moderation, and have never "inhaled".

Just look at your cigaret-using son, who at fifteen has smoked for four years; try to imagine you are not his father; take a calm and dispassionate inventory of him, physically, mentally, morally. Is he as well grown and "stocky" as you were at his age? Does he take the same pleasure in manly sports? Is he as fond of reading and has he as good a stand in his classes? Can he sit or stand perfectly quiet for even ninety seconds when not smoking, or must he twirl a pencil, snap his fingers, teeter his toes, clench his jaws, snap a rubber band, or do some other annoying thing which is the expression of jaded nerves, unsteady muscles, and a mind ill at ease?

Has he the high ambitions and the fine self-control you possessed at his age, and is he already planning for a career in business or profession, and beginning to have dreams of a wife and children and an honored place in the com-

munity by and by, as you were; or are his only plans how he may shirk work or study, have a good time, gratify his senses, and get money for cigarets?

Your grandfather had a son whom he was proud of, and a grandson worthy of the family name and tradition. What are your prospects in this line? *What will you do about it?*—*The Boy and the Cigaret*. (Health Ed. League, Boston).

ONE TEACHER'S METHOD

BY MARGARET SLATTERY

THE prevention of the first act which will lead to the formation of undesirable habits is one of the greatest privileges of the teacher. For example, the cigarette habit, which is working with our boys, evil which no one can realize as does a teacher, may in the majority of cases be prevented, but with difficulty broken. An appeal to reason, to athletic ambition, with clear, emphatic instruction, having no suggestion of the "goody-goody" makes an impression on the average boy.

"You don't dast ter smoke 'cause yer afraid of yer mother," said one of my boys in a taunting way. "I dast *not* to smoke when fellars ask me and that's more than you can say," was the answer. It gave me the basis of all my future arguments. The fact that some boys are so courageous that they dare *not* do things, that they are free and will not be made slaves to any habit by the teasing remarks of other boys, is an appeal to the element of courage and "dare" and has helped me many times with my boys.

I have found that children like to break themselves of little habits. The eleven years old girl who gave me a pin every time she said "ain't," feeling great pride in the lessening number until at the end of the fourth week she had stopped using the word, is an illustration. Encouraging this effort to break with habit is preventive work because the child who realizes the effort needed to break bad habits is more responsive when urged not to form them.

A search for motive is the fundamental work of the teacher who would form right habits. The elevation and strengthening of motive holds an important place in the teacher's creed.

At no time in his experience does a teacher realize more fully the necessity for knowledge of the individual pupil than when he attempts a definite course of habit-making or breaking, with his class. We find a general knowledge of the characteristics and temperament of each child is absolutely necessary if we are to strengthen good habits and destroy the bad.—*Talks with the Training Class*.

Grammar
LessonsFIFTH AND SIXTH
YEARS

A MAN OR A SLAVE

THE teacher will find the article on page 76 a most illuminating one. Make the idea of the boy who "dast *not* to smoke" when tempted, the keynote of the lesson.

Relate to the class the following incident told by John B. Gough.

A MAN AND A THING

A friend of mine threw away his tobacco, saying, "That's the end of it." But it was only the beginning. He suffered intensely, and purchased another plug; but God's spirit came to his aid, and as he held the plug in his hand, he said, "I love you, but are you my master or am I yours? You are a weed, I am a MAN. You are a thing, I am a MAN. I'll master you if I die for it. It shall never be said of me again, there goes a man mastered by a thing." When the craving came upon him, he would defy it. The glory of the victory repaid him for the struggle.

Question the class as to the nature of this weed to which the man had been a slave. Speak specially of nicotine its poisonous principle. Bring out the point that the leaves of the tobacco plant have such a burning, bitter taste that neither fowl, cows, sheep nor pigs will taste them, the only thing that thrives upon them being an ugly green worm. For what purpose has nature made poisonous plants repulsive to animals and to man?

TOBACCO A HARD MASTER

Discuss the question, What is the condition of a slave?

Get from the class that a slave is (1) one who can not follow his own inclinations, but must do as his master bids him; (2) one who is forced to work for his master or to give him his earnings; (3) one who may be obliged to endanger health or even life because his task master will not let him stop when he needs to do so.

By a series of questions and illustrations, lead the class to see that in these same respects most tobacco users are slaves to this poisonous weed. Have the class ask several men who use tobacco if it is a good habit to form; easy or hard to break off; and whether they would advise boys to begin its use, especially in the form of cigarettes. How many have heard men say that they know the habit is an expensive and harmful one, but that they can not break it off now? Point out that of all those who say they can stop whenever they like and do try to do so, only a very few really succeed in breaking the habit, most of them resuming it in a short time.

The slave was forced to give up his earnings to his master although he needed the money for himself. Is this the case with the tobacco user? To develop this point give the class some examples like the following, calling attention to the fact that most persons increase the quantity used.

If a man earns \$2. a day and spends \$.10 for tobacco what proportion of his wages does his habit take from him? If he spends \$.25 per day? At the rate of \$.10 a day how much does the habit get from this man in a year?

Ask the class to mention ways in which this money might have been spent so as to give necessities or luxuries to the whole family.

If a boy buys 3 ten cent packages of cigarettes each week, how much will he spend in a year? If he buys 5 packages a week? If he spent the money for clothes what could he buy? What pleasures or really fine toys like skates, a camera, a tool chest or other boyish treasures?

A boy of ten years begins to use cigarets. He smokes 3 ten-cent packages each week for the first year and 5 packages a week the second. How much has he spent when he is twelve years old?

The next nine years this boy smokes a package every day. How much money would be burned up in those years? If he had saved the money thus wasted, since he was ten years old, how much cash would he have to his credit when he came of age?

Does the money thus spent give any one of the family comfort or pleasure except the one who uses the tobacco? Make it clear to the class that this habit makes a slave of a man because in most cases the habit constantly demands that he give up a larger or smaller part of his earnings.

Not long ago, a man was heard to say that his doctor had told him he had a very weak heart which was being greatly aggravated, if indeed it was not caused, by the use of tobacco. His life was threatened. If he wished to get any better he must give up this harmful habit at once. The man fully understood his physician's

serious words, but said he could not give up his tobacco. This may seem a rather extreme case, but it is not uncommon to hear men say, "Oh, yes, I know my tobacco (or my cigaret) hurts me but I can't stop using it." Tell the class the first incident and ask them to give similar cases they have known. The weed is the man's master and drives him on to sickness and sometimes even to death.

A FIGHT FOR LIBERTY

By contrasts show what liberty means. Speak of how the early settlers came to America because they could not obey their own will in religious things in Europe; how Jews, Russians, and many others come now because at home they are scarcely allowed to do anything they wish; how others come here because in their own land they are forced to give up a large part of what they earn in taxes. Others come because they do not wish to be obliged to go into the army, there to lose valuable time and endanger life and limb.

Speak of those who cry for freedom from the bondage of appetite for drugs like alcohol, opium, and other narcotics.

What did the liberty we enjoy in America cost? How many had soldier relatives or know of soldiers who went to war to fight for liberty? Draw from them the fact that these soldiers left their comfortable homes and those they loved, to endure hardships in camp, and wounds and possibly death on the field, because they thought liberty worth all these sacrifices, and dared to face great danger for its sake.

Returning to the illustration of the early colonists, speak again of their desire to be free and of their signing the Declaration of Independence when to do so was to lay them liable to loss of property and even of life.

We have already seen that tobacco lays a growing bondage of habit on boys and men. Let us draft and write upon the board the kind of declaration of independence needed now.

DECLARATION OF INDEPENDENCE.

Believing that freedom is the right of every American citizen and realizing that it is the nature of tobacco, especially in the form of cigars, to enslave the user, thereby injuring him both in his person and his property, we hereby declare that now and henceforth we will be free and independent from King Tobacco in whatever form he may appear.

State that now, as in 1776, to sign a declaration of independence requires great self-control and courage, in many cases self-sacrifice. Only the bravest and most manly dare *not* to go with the crowd. It is vastly easier to submit weakly.

The patriots expected freedom would give them rich advantages. But they were not thinking of themselves alone. Perhaps for themselves some would not have dared so much, but when they thought of their countrymen and those who were to come after them, they signed the great document that meant liberty to them and to us. We will write under our declaration some of the ways in which we shall be benefited and shall help our country.

The following italicized headings, together with any others that may occur to the teacher may be written upon the blackboard, and underneath them the main points as brought out. These should be copied in permanent notebooks. In the discussion it will, of course, be understood that it is *not* claimed that the abstainer from tobacco is never sick or dull or unsuccessful, nor on the other hand that every user of the weed is the opposite. It is as unwise as it is unnecessary and unscientific to go beyond the well-proved facts. There are many exceptions which seem to prove the rule because observation of all the effects can not be made by the average boy or man.

The teacher will find ample material in this magazine to support these statements and may select such short passages as seem best to answer the needs of her class, writing them in their appropriate places with the names of the authority quoted.

1. *Abstinence from the cigaret and tobacco insures freedom from the power of a narcotic habit.*

The man the master not the slave of a thing.

Bring out the points that it is a filthy and expensive habit, and is one for which nothing good can truthfully be said.

2. *Freedom from disease.* Review briefly the construction of the lungs and air passages. What is the effect upon the membranes of the nose, mouth and throat of inhaling the hot biting smoke of cigars? What is the use of the thousands of tiny air cells of the lungs? What happens to the blood when one breathes fresh air? What is the effect when, instead of pure air, cigaret smoke is inhaled? Be sure your pupils understand clearly that in the latter case the poisonous fumes are introduced directly into the blood, and that there is no place in the body where so large a surface of blood is presented to the polluting effects of tobacco.

If the blood is poisoned instead of purified, what effect on the general health would be likely to follow?

What is the use of the saliva? What effect has the use of tobacco upon it? How does cigaret smoking affect the appetite? digestion? If less food is eaten and assimilation is incomplete what would be the result upon proper

nourishment of the body? If the blood does not carry so much nourishing and building material as it should what is likely to happen to the nerves and brain? To the growing processes of bones and muscles? Show that the facts brought out as to the harm tobacco does the blood and nutrition are reasons why its use tends to stunt growth and development.

Help the class to see that by abstinence from cigarettes and tobacco in any form they can voluntarily remove one cause of diseases of lungs and digestive system and *by so much* ensure to themselves good health and freedom from disease.

3. *Freedom from mental deficiency.*

Recall facts already learned as to the part taken by the brain in the activities of the body, the necessity of keeping it active and alert so that it will wisely and promptly serve the good of the body. The brain in order to do its work well must have a great deal of pure blood. If, as we have seen, the blood sent to the brain is poisoned when cigarettes are smoked, what is likely to be the effect on the brain?

What would you think of an engineer who allowed dirt to clog up the parts of the engine so that it would not readily respond to his wishes?

What would happen in a telegraph office if the instruments which transmit messages were allowed to get out of order so that the operators could not send or receive messages quickly or accurately? What would the class think of a fast runner who tied a ten-pound weight about his ankle before starting on a race on which his whole future life depends? Point out the fact that as tobacco is a narcotic, cigarettes tend to dull the brain, making it less responsive, impairing its power of understanding, remembering and applying facts to be learned. Let the class suggest ways in which the effect of cigarettes on the brain may be as truly a hindrance to a boy as a heavy weight would be to a runner, e. g. the loss of the education necessary if he is to get on in the world.

4. *Freedom from Moral Delinquencies.*

Think of the boys you know who are cigarette smokers. Did they learn to smoke with boys better or worse than themselves? At home or on the street? Did they have their parents' consent, or did they try to conceal the habit

and to live a double life fearing that they would be found out? Is this honest and honorable? If a boy has a habit which he feels he must hide, what is likely to be the effect on his character?

Cigaret smoking dries the throat so that it causes a thirst which may lead one to drink liquors. Furthermore, it is the very nature of the narcotic to lower the moral tone of the user, and to weaken self-control and strength of will, so that when temptation comes to do other wrong things the boy has not the moral stamina to say, No.

On the other hand show by illustrations like piano playing, ball playing, trapeze acts, etc., that practice in body control forms habits which make it easy to do hard things. Accordingly, every time we say, No, to temptations the easier it becomes. (See Miss Gaston's article p. 75)

5. *Freedom from certain failures in business.*

Ask each member of the class to write upon a slip of paper the name of the business he thinks he would like to follow when a man, and under it, five or more reasons why a man already successful in that business would not wish to employ him if he used cigarettes; or ask each boy and girl to name the business he or she would like to follow, and bring out facts showing how cigarettes would be a hindrance; for example, in any occupation of an athletic nature, the use of cigarettes affecting the lungs and heart would spoil all hope of success; the one who wishes to

do fine work such as watch-making, surgery, or electrical work which requires manipulative skill would be too nervous and his muscles too unsteady to do the best work; while the mental work required of a man in the learned professions or as banker, book-keeper, or business manager would be almost beyond the reach of one who lacked memory, concentration and quick perception.

6. *Freedom from tainted blood which might harm those who come after.*

Under this head speak of the advantages we have received from the self-sacrifice and self-control of our parents and all others who came before us, and point out that it is our privilege to live so cleanly and purely that those who follow us will be better and find it easier to do right.

Tell the story of the two officers who were waiting the command to charge a strongly in-



Members in good standing in the Anti-Cigarette League.*

*By courtesy of American Boy.

trenched enemy. One seemed to feel no fear, but the other, pale as ashes, trembled in every limb. "Ho!" said the first, derisively to the second, "you're afraid." "I know it," replied his comrade, standing bravely in his place, "but if you were as afraid as I am, *you* would run." Lead them to see that the finest courage in the world is not to be found in mere physical bravery, or in closing one's eyes to real dangers, but rather in facing dangerous duty unflinchingly, and in standing to principle no matter how much tempted.

One cause of infantile nasal catarrh is the inhalation of impure air loaded with dust and foul gases. I have had cases of persistent "snuffles" which did not abate until the infants were removed from the nicotine-laden atmosphere of father's pipes and cigars.—DR. KATE LINDSAY, (1906).

The boy who is addicted to the use of cigarettes is entirely out of harmony with his school and all of its purposes. He is frequently late and irregular in attendance. He is restless and must be excused frequently. He does not like to study and by and by comes to the place where he tells the truth when he says he can not study. His moral sense becomes so perverted that no dependence can be placed upon what he says. He does not know the truth from a falsehood. His moral standard is low in all respects. He will turn the most lofty sentiment to vulgarity, and the most beautiful painting to vileness. He is slouchy in his manner, his clothing, and his talk. There is a point beyond which a boy may not be saved.—MARTHA J. RIDPATH, Prin. High School, Greencastle, Ind.

"If you are going to do anything permanent for the average man, you have got to begin before he is a man. The chance of success lies in working with the boy and not with the man. That applies peculiarly to those boys who tend to drift off into courses which mean that unless they are checked they will be formidable additions to the criminal population when they grow older.—PRESIDENT ROOSEVELT.

THE MASTER.

"It matters not how strait the gate
How charged with punishments the scroll:
I am the master of my fate,
I am the captain of my soul."

AN INTERESTING OCCASION

ONE of the pleasant features of the State Teacher's Association held in Lincoln, Nebraska, the last week in December, was a reception

given by the Woman's Christian Temperance Union and attended by nearly 1,500 teachers. Among the guests of honor were United States Senator Albert J. Beveridge, Hon. and Mrs. William J. Bryan, Miss Marie C. Brehm, Field Secretary of the Permanent Committee on Temperance of the Presbyterian General Assembly, and several officers of the County and State Woman's Christian Temperance Union.

A short address on Scientific Temperance Instruction, a subject of common interest to teachers and the Woman's Christian Temperance Union was given by Miss Brehm.

Senator Beveridge and Mr. Bryan are both abstainers, and although of different political faiths, can stand on the common ground of personal abstinence, and the training of the children of the nation to an intelligent and sober citizenship.

AN EASY WAY TO STOP IT

WILLIAM PENN was once urging a man he knew to stop drinking to excess, when the man suddenly asked:

"Can you tell me of an easy way to do it?"

"Yes," Penn replied readily, "it is just as easy as to open thy hand, friend."

"Convince me of that," the man exclaimed, "and I will promise upon my honor to do as you tell me."

"Well, my friend," Penn answered, "when ever thee finds a glass of liquor in thy hand, open that hand before the glass touches thy lips, and thee will never drink to excess again."

The man was so struck by the simplicity of the great Quaker's advice that he followed it and reformed.

AN Irish lady in a party which was discussing the virtue and evils of smoking, insisted that the habit shortened life. "I don't agree with you," said a gentleman, "there's my father who smoked every blessed day of his life and he is now seventy years old." "That proves nothing," cried the lady impulsively, "if he hadn't smoked he would probably be eighty by this time.—*Exchange*.

TO OUR READERS, NEW AND OLD! Have you noticed (on the back cover) the choice list of periodicals obtainable at greatly reduced rates in connection with the JOURNAL? As a suggestion of the many good things open to our friends through these offers, we are presenting elsewhere in our columns a story from "*Our Little Folks*" and illustrations from "*Suburban Life*" and "*The American Boy*." Others just as good. Send orders early to get the Christmas numbers.

A WORD TO THE BOY'S SISTERS

BY H. STERLING POMEROY, A. M., M. D.

Some of you are learning to use cigarettes. You think it very chic and smart, and perhaps some of your young men friends call it funny and piquant. Don't imagine for one moment that your brothers or admirers respect you as much as they did before, for they don't.

A young man may, in your presence, treat the matter as a good joke; when in the quiet of his own room he will feel surprised and pained that one whom he had looked up to as a sort of mentor in ethics and deportment should so let herself down.

Others of you who are not using the weed yourselves, yet applaud its use by your brothers and young men friends. You are taking an unworthy position in the matter, and the young men whose good will would be best worth gaining—whether they use tobacco or not—would respect you more and like you better, if you took a stand against the cigaret and stuck to it.—*The Boy and the Cigaret* (Health Education League, Boston.)

Book Notices

THE MARCH OF CHRIST DOWN THE CENTURIES.

International Reform Bureau, 103 Maryland Ave., N. E., Washington, D. C. 128 Pages. Paper, \$1.00. Cloth, \$.25.

Dr. Crafts' little book is the message of a seer telling the past, present and future of the race as it is moved upon by the resistless power of the Christ. Century by century His spirit and ideals have brought about great reforms, the last century closing with three practically accomplished, namely: the Australian ballot system, scientific temperance education laws in every state, and the arbitration agreement which aims to abolish war. Sabbath desecration, social impurity, an aggressive liquor organization, lawlessness, and opposition to temperance education, which we are warned to defend as our very citadel, are all real and present dangers, and these and many others throw their black shadows athwart the future, but "there is nothing the whole church of God, if informed, aroused and united, cannot do."

Anti-Cigarette Helps.

Timely booklets on a timely topic. Teachers! Parents! Do you know what can be said against the tobacco habit? These pamphlets will tell you.

Power of the Tobacco Habit, \$.20.

Boy and the Cigarette, \$.05.

Tobacco: why the cigarette is especially

harmful, \$.20.

Cigarettes and Tobacco, \$.05.

SAMPLES: Samples of each \$.40.

Anti-Alcoholic Helps, \$.10.

SCHOOL PHYSIOLOGY JOURNAL,

23 Trull Street, Boston, Massachusetts

THE SUFFOLK ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

234 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

Latest and Best

MILNE'S PROGRESSIVE ARITHMETICS

First Book - \$0.35 Second Book - \$0.40

Third Book - \$0.45

This new series of arithmetics has been prepared by Dr. Milne to meet the demand which has sprung up in some quarters for a treatment of the subject upon somewhat new lines. This treatment does not, however, depart from the old and tried foundations which have gained for his previous series the widest use throughout the country.

In planning the Progressive Arithmetics, the author has preserved these older features, and infused them with new life by combination with what is best in modern methods of instruction.

Built upon a definite pedagogical plan, these books teach the processes of arithmetic in such a way as to develop the reasoning faculties, and to train the power of rapid, accurate and skillful manipulation of numbers. Each new topic is first carefully developed, and then enforced by sufficient practice to fix it thoroughly in the mind when first presented. The problems relate to a wide range of subjects drawn from modern life and industries, and the numerous illustrations always serve a practical purpose.

Send for illustrated descriptive circular

American Book Company

New York Cincinnati Chicago Boston

ARE YOU A Primary-Kindergarten

Teacher?

That is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the ONLY HOUSE IN THE U. S. putting up Kindergarten material especially for Primary Schools. If you will send for free catalogue now we will send you of charge instructions for using Kindergarten material in primary schools, the regular price being 25 cts. Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.





DOES 40% SAVING INTEREST YOU

School Physiology Journal Club Offers

Every group must contain the **SCHOOL PHYSIOLOGY JOURNAL**. Magazines may be sent to different addresses. Subscriptions may be new or renewals. Many more combinations for the asking.

FAMILY GROUPS.

World's Work, †	\$3.00	OUR PRICE \$3.25
McClure's, †	1.00	
Delineator, †	1.00	
Physiology Journal,	.60	

Review of Reviews,	\$3.00	OUR PRICE \$3.10
Woman's Home Companion,	1.00	
Success,	1.00	
Physiology Journal,	.60	

Review of Reviews,		OUR PRICE \$3.75
Any two of Class A,		
Any one of Class B,		
Physiology Journal,		

YOUNG FOLKS' GROUPS.

C. E. World,*	\$1.00	OUR PRICE \$2.40
Or Little Chronicle,	1.50	
Or American (Leslie's),	1.00	
American Boy,	1.00	
Our Little Folks (new),	1.00	
Or Success,	1.00	
Physiology Journal,	.60	

St. Nicholas,	\$3.00	OUR PRICE \$3.60
Any one of Class A,	1.00	
Physiology Journal,	.60	

TEACHER'S GROUP.

Normal Instructor,	\$.75	OUR PRICE \$1.50
Primary Plans,	1.00	
Physiology Journal,	.60	

FARM GROUPS.

Farming,	\$1.00	OUR PRICE \$2.00
American Farmer,	.40	
Reliable Poultry Journal,	.50	
Kimball's Dairy Farmer,	.50	
Art Portfolio (6 pictures),	1.00	
Physiology Journal,	.60	

Suburban Life,	\$1.50	OUR PRICE \$2.00
Farming (with \$1000 accident policy 1 year),	1.00	
Physiology Journal,	.60	

CLASS A.

C. E. World,*	\$1.00	Any 1 with JOURNAL \$1.10
Success,	1.00	
Woman's Home Companion,	1.00	
American (Leslie's),	1.00	Any 2 with JOURNAL \$1.75
Our Little Folks, (new)	1.00	
American Motherhood,	1.00	
Primary Plans,	1.00	Any 3 with JOURNAL \$2.35
Teacher's World,	1.00	
Farming (with accident policy),	1.00	

CLASS B.

American Boy,	\$1.00	Any 1 with JOURNAL \$1.00
Everyday Housekeeping,	1.00	
Normal Instructor,	.75	Any 2 with JOURNAL \$1.50
Designer,†	.50	

CLASS C.

Suburban Life,	\$1.50	Either with JOURNAL \$1.50
Little Chronicle,	1.50	

† Single subscriptions for full price only.

*Add 10 cents if this is chosen.

†Less 10 cents if this is chosen.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

92.



THE SCHOOL PHYSIOLOGY JOURNAL

Boston Public Lib

• CONTENTS •

	Page
Average Duration of Life Increased by Total Abstinence By Joel G. VanCise	81
Question for the Patriotic Citizen	84
Primary Lesson—Food and Digestion	86
Problem of Americanizing a Million Immigrants Yearly	89
Editorials	91
Campaign for Hygienic and Temperance Teaching in Great Britain	91
"Send the Multitude Away." By Dr. J. J. Ridge	92
Intermediate Lesson—Excretion	94
High School Lesson—Patriotism vs. Alcoholism	96a

PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVI. NO. 6
FEBRUARY, 1907



Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid to any address on request.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.
\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Mich

Latest and Best

MILNE'S PROGRESSIVE ARITHMETICS

First Book - \$0.35 Second Book - \$0.40
Third Book - \$0.45

This new series of arithmetics has been prepared by Dr. Milne to meet the demand which has sprung up in some quarters for a treatment of the subject upon somewhat new lines. This treatment does not, however, depart from the old and tried foundations which have gained for his previous series the widest use throughout the country.

In planning the Progressive Arithmetics, the author has preserved these older features, and infused them with new life by combination with what is best in modern methods of instruction.

Built upon a definite pedagogical plan, these books teach the processes of arithmetic in such a way as to develop the reasoning faculties, and to train the power of rapid, accurate and skilful manipulation of numbers. Each new topic is first carefully developed, and then enforced by sufficient practice to fix it thoroughly in the mind when first presented. The problems relate to a wide range of subjects drawn from modern life and industries, and the numerous illustrations always serve a practical purpose.

Send for illustrated descriptive circular

American Book Company

New York Cincinnati Chicago Boston

School Physiology Journal

Vol. XVI

BOSTON, FEBRUARY, 1907

No. 6

"Give Thanks, O Heart."

By Edwin Markham.

GIVE thanks, O heart, for the high souls
That point us to the deathless goals—
For all the courage of their cry
That echoes down from sky to sky;
Thanksgiving for the armed seers
And the heroes called to mortal years—
Souls that have built our faith in man,
And lit the ages as they ran.

Lincoln, Mazzini, Lamennias,
Living the thing that others pray;
Cromwell, St. Francis, and the rest,
Bearing the God-fire in the breast—
These are the sons of sacred flame,
Their brows marked with the secret name;
The company of souls supreme.
The conscripts of the mighty Dream.

Made of unperishable stuff,
They went the way when ways were rough;
They, when the traitors had deceived,
Held the long purpose and believed;
They, when the face of God grew dim
Held thro' the dark and trusted him—
Brave souls that fought the mortal way
And felt that faith could not betray.

Give thanks for heroes that have stirred
Earth with the wonder of a word.
But all thanksgiving for the breed
Who have bent destiny with deed—
Souls of the high heroic birth,
Souls sent to poise the shaken Earth,
And then called back to God again
To make heaven possible for men.

—From the *Independent*.



THE AVERAGE DURATION OF LIFE INCREASED BY TOTAL ABSTINENCE*

BY JOEL G. VAN CISE

Actuary of the Equitable Life Assurance Society of the United States

ON April 25th, 1895, Mr. Emory McClintock read a paper before the Society "On the Rates of Death Loss Among Total Abstainers and Others," in which he gave some very interesting figures derived from the experience of the Mutual Life Insurance Company of New York. This paper is printed in Volume IV of the "Papers and Transactions."

The mortality experience of the Mutual Life was given up to policy anniversaries in 1889, on the lives of those who, beginning with the year 1875, had stated in their applications that they were total abstainers from the use of alcoholic beverages; and for a somewhat longer period, the experience was given on the lives of those who had stated that they were moderate drinkers of such beverages. The actual loss on both classes of lives was compared with the expected loss according to certain percentages of the American table, which were very properly designed to represent the maximum expected loss in the various years during which the policies were in force, allowance being made for the element of medical selection.

The percentage among abstainers of the actual death loss to the expected death loss was 78,

while the corresponding percentage among the non-abstainers was 96. Comparing these two percentages, it would appear that the death rate among non-abstainers, as shown by the experience of the Mutual Life, was 23 per cent higher than among abstainers, the difference of 18 being about 23 per cent of 78. Fortunately these figures were derived from the experience of the Mutual Life, and were, therefore, of such great magnitude as to free them from any possible accusation of not being large enough to be of any practical value.

If any similar data have been made up or printed, by any American, or Canadian, life assurance company, large or small, they have not come to my knowledge; but some statistics of English and Scotch life assurance companies have recently been published which seem to fully confirm the conclusion which may fairly be deduced from Mr. McClintock's paper as to the value of total abstinence in tending to lessen the rate of mortality among assured lives.

The experience of the Sceptre Life Assurance Society, Ltd., for the twenty years from 1884 to 1903, inclusive, gives the following figures: For abstainers, expected deaths, 1,440; actual deaths, 792, or 55 per cent of the expected

*From an address before the Actuarial Society of America, Oct. 1904.

Non-abstainers, expected deaths, 2,730; actual deaths, 1,880, or 79 per cent of the expected.

The experience of the Scottish Temperance Life Assurance Company, Ltd., for the twenty years from 1883 to 1902, inclusive, gives the following figures: Abstainers, expected deaths, 936; actual deaths, 420, or 45 per cent of the expected. Non-abstainers, expected deaths, 319; actual deaths, 225, or 71 per cent of the expected.

These figures are given in a little book recently published in England entitled, "Alcoholic Beverages—The Comparative Mortality of Abstainers and Non-Abstainers," and as the book was sent me by Mr. R. P. Hardy, I have no doubt of the correctness of the figures given therein. In the case of both companies, the difference in the experience as between abstainers and non-abstainers is remarkable, the percentage of the death rate of actual to expected being about 50 per cent higher with non-abstainers than with the abstainers.

The most reliable and comprehensive experience which has ever been published in Great Britain, however, is that of the United Kingdom Temperance and General Provident Institution, of London, which was shown in detail in a paper read before the Institute of Actuaries (Nov. 30th, 1903) by the Actuary of the Company, Roderick Mackenzie Moore. This paper is entitled "On the Comparative Mortality Among Assured Lives of Abstainers and Non-abstainers from Alcoholic Beverages."

The company in question has always kept very carefully the records of its policies in two sections—total abstainers being included in what is called the Temperance Section, and non-abstainers in what is called the General Section. Policies on the lives of abstainers have been issued since the year 1841, and on the lives of non-abstainers since the year 1849.

The figures given in the experience include the entire experience of the office to the end of the year 1901, thus covering over sixty years, in the case of abstainers, and over fifty years, in the case of non-abstainers. The same premiums have always been charged for both sections, the total abstainers receiving any advantage arising from their superior vitality in the form of additional bonus or dividend.

The Temperance Section is composed entirely of total abstainers, and the General Section, of moderate drinker, selected, it is claimed, with the same care which is exercised by other companies in the selection of their risks. There are two important points to be noted:

1st. That there has been no marked difference in the number of policies in force in the two sections.

2nd. The average amount of the policies in each section has been about the same, so that the comparison of the experience would seem to be as fair a one as could possibly be made.

With this explanation, I will now give the figures on male lives; non-abstainers; whole life policies:

Total number of years of exposure to risk, all ages	466,947
Expected deaths by O ^M table	8,911
Actual deaths	8,943
Per cent of actual to expected	100.4

Male lives; abstainers; whole life policies:	
Total number of years of exposure to risk	398,010
Expected deaths by O ^M table	6,899
Actual deaths	5,124
Per cent. of actual to expected	74.3

The difference between the percentages of actual to expected deaths as between abstainers and non-abstainers is, therefore, 26.1 per cent, and the rate of death among non-abstainers was 35 per cent higher than among abstainers.

LIVES IN TWO CLASSES STRICTLY COMPARABLE EXCEPT IN USE OF ALCOHOLIC DRINKS

The information given in Mr. Moore's paper produced a lengthy discussion among the members of the Institute, and a few of the speakers made some effort to break the force of the conclusions which would naturally be arrived at from the figures here given.

One of the suggestions made was, that the lower mortality among abstainers might have arisen from their being a better class of lives in other respects than non-abstainers; but it was distinctly stated by Mr. Moore, in his paper, and by Mr. T. P. Whittaker, M. P.,—who, as the Chairman and Managing Director of the Company, was present as a visitor, and took part in the discussion—that there was practically no difference whatever between the two classes of lives in the General Section and in the Temperance Section, except as regards their use of alcoholic beverages. Those in the Temperance Section were total abstainers, and those in the General Section, moderate drinkers, selected with the same care as is exercised in other life assurance companies.

Instead of the lives in the Temperance Section being more carefully selected than those in the General Section, it was suggested in the discussion that the reverse was probably the case; for physical defects, or impairments, are always more likely to be overlooked by medical examiners in the case of total abstainers than with moderate drinkers. It seems to me, therefore, that Messrs. Manly and Hardy, and others

who took part in the discussion, were correct in their statements that the figures derived from the long and extensive experience of the United Kingdom Temperance and General Provident Institution were conclusive in their demonstration that the effect of total abstinence from alcoholic beverages is beneficial to health, and conducive to longevity.

There are, however, many other testimonies to the effect that the use of alcoholic beverages produces an increase in the rate of mortality. So destructive has been their effect upon the lives of the North American Indians, that under United States law it is a penal offense to sell alcoholic beverages to an Indian. The mortality among Africans and South Sea Islanders has also been so increased by the use of alcohol, that simply as a matter of humanity, the civilized nations

of the world have united in their efforts to stop the sale of liquor in the Congo and in certain islands of the Pacific. While it is doubtless true that the deleterious effects of alcoholic beverages are more apparent among black men and red men than among white men, yet, as we have the assurance that all nations are

made of the same blood, what is injurious to one cannot be beneficial to another.

EXCESSIVE MORTALITY AMONG LIQUOR DEALERS DUE TO ATMOSPHERE SURROUNDING THE BUSINESS

As further proof of the injurious effect of alcoholic beverages, as shown in the death rate, I would refer to the statistics which have been published from time to time, showing the percentages of mortality in the various occupations. These statistics have invariably shown a higher death rate among those engaged in the liquor business, from brewers down to bartenders, than among those engaged in other occupations, except such as are clearly defined as specially hazardous.

The higher death rate among liquor dealers is so universally recognized by life assurance companies that a number of them will not issue policies, even on the lives of the richest brewers, upon any terms, and not one of the companies, to my knowledge, admits liquor dealers upon as advantageous conditions as those engaged in other ordinary occupations.

As an example of the restrictions in this respect, I would quote the rules as given in a circular sent to the agency force of a prominent United States company. This circular reads almost like a temperance document, and yet it is simply sent out as a matter of business, because statistics show that owing to what might be called the very atmosphere by which liquor dealers are surrounded, the mortality among them is higher than among those engaged in

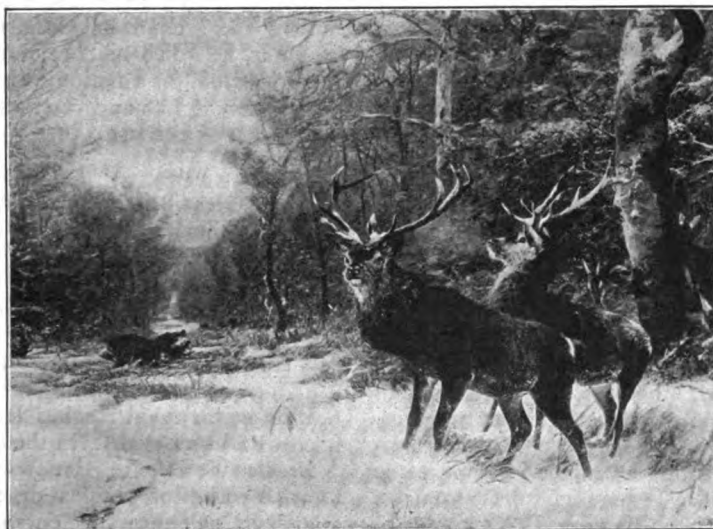
occupations which do not involve the handling of alcoholic beverages. This circular contains the following instructions:

"Please note that bartenders are *positively not taken*, and saloon-keepers *tending bar occasionally* are therefore unacceptable. Only saloon keepers of the best class, very temperate in

their habits, not tending bar, and enjoying the best moral surroundings which the business permits, will be taken at all, and only on 10 and 15 Year Endowment G. C. V. policies.

"General store-keepers everywhere, handling liquor at retail as part of their business, if taken at all, will hereafter be limited to dividend accumulation Endowment policies with not more than 20 years to run, but no policies with return of premium or with the Indemnity or Mortuary dividend feature will be issued to this class of applicants. This limitation is made necessary by the very excessive rate of mortality found to exist among persons so employed."

It may be well to state here that an applicant for assurance is never refused because he is a total abstainer, while others are being constantly



"We cannot know how far and deep
Their mystic instinct reacheth.
Nor what mute sense of Right and Love
These poor dumb children teacheth."

rejected because of their excessive [so-called] indulgence in alcoholic beverages, as shown in the results of medical examinations, or the reports made by inspectors of risks under consideration. A careful investigation is made of every applicant's drinking habits, because of the unquestionable fact that intemperance is one of the chief causes of a high rate of mortality, and a man known to drink to [what is called] excess can rarely obtain a policy in any company, even under the most disadvantageous conditions.

MODERATE DRINKING DANGEROUS

By many, however, who acknowledge and condemn the evils of intemperance, it has been generally supposed that what is called a moderate use of alcoholic beverages is not only harmless, but even beneficial. It is largely for their benefit that this paper has been written, for while the primary service to be performed by Societies of Actuaries is some what technical in its nature, and, therefore, uninteresting to outsiders, yet it is a happy combination when statistics can not only furnish valuable information to life assurance companies and experts, but also at the same time teach a lesson which may be of material value to the general public.

Drunkness is universally condemned and deplored, but all drunkards began as moderate drinkers, and the smaller the number of moderate drinkers, the smaller will be the number of drunkards whose habits render it impossible for them to obtain that protection for their families, in case of their death, which assurance companies would, otherwise, be glad and willing to furnish. A total abstainer can never become a drunkard, and I believe that it is universally admitted that a drunkard can never be reformed, except by becoming a total abstainer.

If, therefore, it can be proved that total abstainers show a death rate which is materially lower than that experienced among the most select body of moderate drinkers, in regard to which statistics are obtainable, I submit that total abstainers have the best of the argument as regards the use of alcoholic beverages; and, considering the care with which the risks of a life assurance company are selected, intemperate applicants being rigidly excluded, I contend in conclusion, that the facts mentioned in this paper show conclusively that the effect of total abstinence is to lower the death rate, and increase the average duration of human life.

HERBERT'S little brother had been ill with diphtheria, and a friend inquiring how the little fellow was getting along, was reassured—and amused, when Herbert replied: "Oh! he's better. The doctor says he isn't issuing any germs now. There's one or two way down his throat but he isn't *issuing* any."

A QUESTION FOR THE PATRIOTIC CITIZEN

BY EMMA L. TRANSEAU

WHAT percentage of the people in a community are in good health? What percentage are incapacitated for self-support because of mental or physical shortcomings?

What percent of income do the well-to-do have to contribute for the support of the indigent, for detection and punishment of crime?

How much more business would be done by the marketman, baker, grocer, tailor, and all other merchants and producers, except those engaged in liquor and tobacco traffic, if all of the submerged or barely existing classes could buy as much as efficient self-supporters?

If a stock raiser should produce as many defective or unsound specimens as are to be found among the human inhabitants of some communities, he would be considered a failure. Is it less suicidal for a nation to ignore the causes of its losses in human live-stock, and to neglect means of prevention?

WHAT THE RACE LOSES

When Great Britain set about recruiting her armies for the Boer war and found an astonishingly large proportion of her volunteers unfit for military service, she began looking around for the reason, and she discovered that drink held a prominent place among the causes. A particularly alarming feature was the amount of drinking among women; for when unfitness for healthy motherhood reaches large proportions, it needs no seer to discern the danger signal.

Besides the definite relation which drink bears to other causes of physical degeneracy, there is abundant evidence of enormous losses in progeny associated with alcoholic parentage.

The well-remembered report of Prof. Hodge of Clark University on the progeny of alcoholized dogs was closely parallel to observations made a few years before by Prof. Demme, upon the children of alcoholized human beings.

Prof. Hodge reported that only 17.4 per cent of the young of alcoholized dogs were able to live; while 90.2 per cent of the young of the unalcoholized pair lived and grew.

Prof. Demme found that only 17 per cent of the children of ten alcoholized parents were able to go on with existence; while 88.5 per cent of the children in ten non-alcoholic families were well-endowed with vitality.

Of the children born with sufficient stamina to make a start in life but not with enough to keep long on the journey, a very large proportion are the descendants of drinking parents. Last year a German magazine¹ published a re-

¹ Internationale Monatschrift, July, 1906.

port of investigations made by Dr. Plant, into the histories of 29 families in which one or the other of the parents was a drinker.

Beside 30 per cent of miscarriages and stillbirths, 32 per cent of those born living (60 out of 183), died during their first year. Of the whole 183, only 23 could be called physiologically sound, and of these 8 showed marks of degeneracy.

Another investigation¹ brought out the fact that the loss of children between 1 and 2½ years in 81 families of drinkers lacked but 4-10 of one per cent of being double that of a like number of non-alcoholic families.

Count Douglass of Germany stated publicly in 1905 that next to Russia, Germany has the greatest infant mortality of any country in Europe, that Sweden formerly had a similar rating, but by instruction and active temperance work, it had reduced its rate one-half. The Count asserts that no measure against infant mortality will be effectual without combating alcoholism.

HOW THE RACE IS BURDENED WITH INFERIOR INDIVIDUALS

Striking as is the loss in numbers, the loss in quality is even worse.

"Quality suffers first, then quantity," says Dr. Alfred Ploetz.² "By means of slight degenerations the race becomes burdened with a multitude of inferior individuals. . . . Hence when the consumption of alcohol is very widespread, the production of inferior variants, which has taken place quickly, over-balances the slow eliminations brought about by the struggle for existence, and the inferior individuals must gradually accumulate."

Prof. Berkley of Johns Hopkins University has said: "Pronounced alcoholism in the parents always means examples of mental diseases and weak-mindedness in the children, provided the alcoholic tendency is not acquired somewhat late in life. An inebriate father is certainly a handicap; an inebriate mother is a greater misfortune, but the offspring of an inebriate father and mother seem to be doomed from birth.

"Fantastic and irrational ideas, hardly sufficiently fixed to be called illusions, are common to the weak-minded offspring of such parents."

Dr. T. A. MacNicholl's recent examination of some thousands of New York City school children told the same story of physical and mental defects.

Of the children afflicted with hereditary alcoholic taint, 77 per cent were dullards, 30 per

cent were very deficient and 76 per cent suffered from organic diseases; while among the children free from alcoholic parentage only 4 per cent were dullards and only 18 per cent suffered from organic diseases.

To the hereditary defects of the drinker's children must often be added the evils of bad environment. Prof. Demme says, "The child of alcoholic parents, born debilitated, is ill-fed, ill-clothed and ill-housed, because the money which would feed, clothe and house it well is either not earned, or is spent on alcohol."

ABSTINENCE AN APPEAL TO THE ALTRUIST

There are moderate drinkers who ask, "Why should I deny myself what I consider a harmless pleasure because there are those who do not know when they have had enough?"

To this question there is more than one answer. There is the answer from the pocket-book side. If you drink, you encourage a custom that increases your tax-bill and your losses. The liquor-seller's license does not pay the damage his wares do the money-earning power of his community, and the well-to-do have to help pay the deficit. If you are a merchant or a producer, the liquor-seller is your most dangerous competitor. His is the "preferred stock." If you are an employer, you find losses in property and profits due to drinking employes, and you cannot consistently require abstinence from them if you yourself are not an abstainer.

Your personal example of total abstinence will go farther toward securing public safety than any preaching of moderation, for the cobweb line between moderate and immoderate use sways easily in the faintest alcoholic fumes.

From the patriotic standpoint, there is an irrefutable reason for opposing drinking customs. The destiny of a nation depends upon the character of its citizenship. Customs, such as the use of narcotics, that impair in man the elements which determine character, are a menace to the rank and perpetuity of the nation.

Beyond the selfish or even patriotic standpoint, for those who are capable of something of that Divine compassion that wept over Jerusalem, there is a compelling answer in favor of total abstinence. He who can see, in imagination or otherwise, the heart-break, misery, pain, and blight due to the poisonous effect of alcohol on the human brain, cannot quibble over how much is much and how much is little. He must, if he is true to the Divine spark within him, join in the cry that is beginning to echo round the world, "Away with alcohol and all brain-soddening drugs from the customs and habits of men."

¹Report of the Bremen Anti-Alcohol Congress.

²Arrive, Hygienic Rundschau, July, 1905.



Primary Lessons

THIRD YEAR

FOOD AND DIGESTION

HAPPINESS, good temper and not seldom gratified ambition, wait upon good digestion; and good digestion and future sobriety depend very largely upon the habits of self-control in eating and drinking which must be formed in childhood.

Moreover, in view of the fact that the brewers by means of signs, bill-boards and newspapers are everywhere teaching the beer-a-pure-food fallacy, it is important that the children should be thoroughly taught the insidious nature of the so-called "lighter" alcoholic beverages, including wine and cider as well as beer: first, because we should preempt the boys and girls for sobriety before they form a liking for such drinks; and, second, because in some families, children of this age, even, are being given beer with their meals more or less regularly, and taught that it is a good food necessary to healthy growth.

In presenting this subject (which is intended to cover several lessons) the teacher should throw the emphasis on the hygienic teaching developing the few physiological facts by observation and using them as a basis for that instruction.

The day before the lesson, prepare an artificial gastric juice by dissolving 10 grains of pepsin powder in $1\frac{1}{2}$ pint of water and adding 15 to 20 drops of strong hydrochloric acid or about two teaspoonfuls of the dilute acid. (These ingredients can be procured of almost any druggist at a trifling expense.) Put some of the solution in a number of wide-mouthed bottles or test-tubes. About four hours before the lesson, put chopped egg, boiled medium hard, in one of the bottles and set where it will keep warm, shaking occasionally. About an hour and one-half before the lesson start a second bottle. In each bottle have one or two pieces of egg much larger than the rest. Start a third bottle with some of the solution and a little of the egg, together with some pieces of

cheese, pork, boiled cabbage, cucumber, bread, veal, or other foods difficult to digest. Reserve some of the chopped egg and a fourth bottle containing solution to start during the lesson.

Peel and grate one or two raw potatoes, add a pint of water, shake well, and allow the starch to settle, after which the water may be turned off and clean water added, the mixture well shaken and the starch again allowed to settle. Cleanse again if the discoloration from the potato is not sufficiently eliminated. The starch will show better in a glass. Have ready also two or three lumps of laundry starch, and some pieces of cracker and grains of barley.

STARCHY FOODS: HOW CHANGED IN THE MOUTH

Show the class the lumps of laundry starch and then the potato starch and tell them how the latter was obtained. Let them see that both are the same. They will be interested to know that in the olden times people made their own starch in this way.

What other kind of starch is often to be seen in the kitchen pantry? From what is it made? (If they cannot guess let them look at the boxes of corn starch at home, or lead them to see that its name tells the secret.)

Name another kind of starch sometimes used? From what is flour made? How many foods have we already learned contain starch? (Potatoes, corn, wheat.) See if the class cannot suggest others. If not, explain that foods like the crackers, bread, cake, breakfast foods, and grains like wheat, barley and rice, and some fruits, all contain starch.

Let us see what happens to foods containing starch when we eat them. I will let each of you chew a bit of this cracker and then two or three grains of barley. What happened to the cracker in the mouth? If one tried to swallow the cracker before it was moistened and made fine, what would be the result? What difference in taste both of the cracker and of the barley? We call this moisture in the mouth "saliva." What two uses has saliva? Bring out the points (1) that saliva moistens all our food so it can be swallowed easily, and (2) changes foods containing starch to a kind of sugar. Why then should our food be well chewed?

USE AND CARE OF THE STOMACH

How many of you had an egg for breakfast or lunch? What did you do with it? Where did it go after you had chewed and swallowed it?

Show a picture or a chart giving the shape of the stomach. Explain that the stomach is a tough bag made of muscles, and that in a child it holds about as much as a pint cup or milk bottle. Tell them that a fluid we call gastric

juice is poured into it from the lining of the stomach, and that this juice helps prepare the food so that it can be used by the body.

We are going to see now if we can find out what the stomach does with the egg you ate. Here is some egg all chopped fine, and here is a bottle that contains a fluid similar to that which comes into your stomach when you eat, the "gastric juice." We will put the chopped egg into the bottle.

Show the bottles containing egg that were previously prepared and compare with the one just mixed. Notice the difference between the contents of the bottle in which the egg was placed an hour and a half previously, and those of the one filled four hours before. Let the class observe that the solid food is being changed into a soup-like liquid, and tell them that something like this takes place in the stomach. Apply the word "digest," showing that it means the changing of the food into a form the body can use.

Explain that the bottles had to be shaken every little while to keep the contents well mixed, but that the stomach is shaken while digestion is going on by the pulling and stretching of its own muscles, that the stomach muscles have to work to digest food, and like other muscles, when they have worked for a while they need rest.

Show the large pieces of egg in the first and second bottles, if still undigested. Why did these pieces not change so quickly as the pieces which were the size of those the class saw the teacher put into the bottle? (If the class does not readily think of the difference in size as an explanation, show a large piece and a small piece of candy and ask which it would take longer to eat.) Which would make the stomach work longer, large pieces of food or small pieces? What can we do to prepare the food so that the stomach will have time to rest? Bring out the hygienic points clearly.

Sometimes when you are playing tag out-of-doors you run until the muscles in your legs get tired. Suppose, instead of resting them a few minutes, you keep right on trying to run, can you play the game as well? Why not? Sometimes boys and girls treat their stomachs just as they would their legs if they ran when tired. They eat a good breakfast, then an apple or two on the way to school, a lunch at recess, perhaps nibble some candy on the way home, and then have dinner. How much rest did the poor stomach get between breakfast and dinner? Why will it not be able to take care of the dinner as well as it would if it had had nothing to

do since it digested the breakfast? The story "The Duck Clock," may help impress the lesson of *eating only at certain hours.*

Show the bottle into which pork, cabbage, etc., were placed. Compare the contents with those of the bottles containing the egg. Explain that these were just as finely cut as the egg, but that it takes longer for the stomach to change some kinds of food than others. Which gives the stomach more time to rest between meals, the easily digested foods or those needing more time? Make a list of each. Let the instruction impress on the class the following three



February's Merry Hunters.

points:

Food should be taken into the mouth in small pieces and carefully chewed.

We should eat at regular times and not between meals.

Foods that are readily digested are best for children.

FOOD FOR GROWTH

Which has the larger, stronger muscles, a man or a boy? How does he get them? Do you have the same kind of food every meal? Do you have more than one kind of food at a meal? Explain that the body needs different

kinds of food, some to *make it grow*, some to *make it strong to work*, some to *keep it warm*.

What do you feed your kitten to make it grow into a big cat? your puppy to make him a fine, large dog? What are some of the foods that make boys and girls grow? If meat is mentioned, make it plain that while meat helps in growth, there are other foods, such as milk, eggs, peas, beans, etc., which will help build the body as meat does, and which should be used instead of much meat. Write on the black-board a list of these foods which aid growth.

FOOD FOR HEAT AND STRENGTH

Why do you wear thicker clothes in winter than in summer? If you should wrap a thick coat around a stick of wood, would it make the stick warm? How then does the body get its warmth? Put a small piece of butter in a tin candlestick and ignite it. Let some pupil discover that in burning it gives out heat. Take precautions against burning the child's hand. Explain that the butter we eat burns in our bodies, not quickly and with a flame as in the air, but slowly, and that it produces heat. It is the burning of food inside the body and not our clothing that makes us warm. Clothing keeps the heat made inside our bodies from passing away. Show that butter is not the only heat-making food; for all our food will make some heat, but that butter, cream, some other fat foods, and sugar make more in proportion than the others. If practicable, burn a little sugar and let the children see the flash of the blue blaze. Tell the class that sugar also gives us strength to work. Refer to the starchy foods, (cracker and barley) they ate, and recall the change in the taste. Show that as the starchy foods are changed to sugar, they give us both heat and strength.

MENUS

Let the children make simple menus, under the teacher's guidance for three typical meals showing the different kinds of food.

This exercise may be used to show modifications of diet necessary for season and climate, also for correction of errors in diet. Talk with pupils about the foods which are best suited to each season, leading them to see why we need less fat in summer, and more vegetables and fruit. Speak of the food eaten by Eskimos, and by people living in hot countries. Show that people living in a country neither very hot nor very cold, like ours, need a mixed diet. Speak of the meat diet of wild animals and the fierceness that results, of the peaceable habits of the animals that eat no meat. Too much meat given to kittens makes them fierce. Unripe fruit makes the stomach work too hard.

DRINKS: WHOLESOME AND UNWHOLESOME

Having spoken of the various foods, take up the matter of drinks. Let one child write upon the board a list of drinks as suggested by members of the class.

Which is the best drink? Show that tea and coffee are likely to prove harmful especially to children. What rises on the top of milk? What is made from cream? What kind of food is butter? Point out that milk, and cocoa as well, contain nourishing materials and so are foods as well as drinks.

What do such drinks as wine, beer, and cider contain? Compare them with the drinks just mentioned and show that although they were made from good grains and fruits they are not foods, because almost all the food material they contained have been changed into a gas and this poison alcohol, and so are unfit to drink.

Show that alcoholic drinks, even in small quantities, may harm the stomach by irritating the inner lining, and if used steadily are liable to weaken the parts of the lining that give out the gastric juice.

Emphasize the still more important point that alcohol has the power to make one wish for more and more till he often finds it impossible to stop drinking it. Let us make a new list of healthful drinks omitting those that may do us harm.

Speak also of the use of tobacco and especially of cigarettes. How does the stomach tell a boy who is beginning to smoke or chew that tobacco is harmful? Point out that the cigaret habit tends to injure the appetite and the best work of the stomach, and is very hard to break.

THE DUCK-CLOCK

BETTY was a little girl who lived in the country. One Saturday morning in the early summer she was helping her mother dust the kitchen. When she got as far as the mantel-shelf, she stopped and exclaimed, "Oh, Mamma, the clock has stopped!"

"Sure enough," said her mother, looking at the clock. "It was half-past nine an hour or more ago. I wonder what time it is."

"Why!" exclaimed Betty, "we won't know what time to get dinner. If we get it too early, the things will spoil, and if we get it too late, the men will be here and they won't like it a bit if dinner isn't ready."

Betty's mother thought a moment and then she said suddenly, "I know. I have always fed those little ducks every day at eleven o'clock, and I have noticed now for a week or more that they come up to the door and begin to quack at exactly eleven. We'll set the clock at eleven when they come up."

Betty laughed heartily. She thought it was a joke to have ducks tell them the time of day.

"You'll see," said Mamma. "You just watch."

By and by the little ducks came up to the door calling, "quack-quack, quack-quack," and Betty ran and set the clock at eleven and started it going, while her mother fed the ducks. Then Betty and her mother began to get dinner, and had it all ready to place on the table when the clock struck twelve. Betty ran out where she could see the field in which the men were at work, and saw them starting with their horses for the house.

"They're coming, Mother," she cried, running back. "The ducks are all right."

"Good for you, Mother," said Betty's father, when he had washed his hands and come to the table. "You always have dinner on time."

Betty and her mother looked at each other and laughed. "You'll have to thank the ducks this time," Betty said, and then they explained.

"That's right," said the farmer. "Animals are very regular in their eating when they can have their way. That woodchuck used to come regularly every afternoon about four o'clock to eat our cabbage, and when we are out in the fields we almost always know, without looking at our watches, when it is twelve o'clock, because our stomachs tell us when it is noon."

"I suppose they have that hungry feeling because the body needs more food," said one of the men.

"Yes," said Betty's father, "the machine seems to be wound up to run about so long. When it runs down and we are really hungry it is time to eat."

"Do you mean our bodies when you speak of the machine?" said Betty.

"Yes," said her father, "our bodies are like machines with the different parts all fitted to work together. If we make a practice of eating between meals we do not have so good an appetite at the regular meal times and if the stomach is kept working when it ought to be resting it may wear out before the other parts."

"I wonder," said Betty, slowly, "if that is the reason Mamma says it so bad for me to eat cookies or even bread and butter between meals. She doesn't want me to treat my stomach so badly that it will get tired and worn out before the rest of my machine does."

"I suspect that is the very reason," replied her father.

"Well," said Betty brightly, "I suppose if the little ducks and even the woodchucks think they must be regular with their meals, a little girl ought to be ashamed to tease for lunches, but I do get dreadfully hungry sometimes."

THE PROBLEM OF AMERICANIZING ONE MILLION IMMIGRANTS YEARLY

BY J. C. JACKSON, D. D., PH. D.

THE public schools of the United States are our chief national resource for Americanizing the foreign population which is poured at the rate of nearly or quite a million a year upon our shores.

While the writer was associated several years ago, with moral and religious work among this element in Greater New York, it was a common expression among us that, through the public schools and other remedial agencies among the children of foreigners, we could clean up the slums of the metropolis, and make good American citizens of the recently arrived population within two generations, if new thousands of foreigners were not being continually dumped upon our hands. As a matter of fact these foreign born children when well taught, often develop a great appreciation of our free institutions and become enthusiastic and intelligent young patriots.

EARLY SCIENTIFIC TEMPERANCE EDUCATION NECESSARY IF FOREIGN CHILDREN ARE REACHED

It is apparent to the slightest thought that the Scientific Temperance instruction, of which Mrs. Hunt has been the pioneer and largely the creator, must be one of the chief resources for Americanizing these young foreigners. They come to us imbued with the lax temperance ideas and practices of Europe. Their only notion of the Sabbath is the continental one, well saturated with beer, wine and whisky. New sets of ideas have to be created in their minds. Nothing will do it but scientific temperance instruction.

The German-American Bund of Ohio claims to have at this time about 80,000 members. There is no way of laying the axe at the root of its propaganda of beer except by doing so through its children in our public schools. Unfortunately, in some states, this instruction is not given in the schools till the sixth grade is passed and thus many children whose schooling is confined to the first six grades are deprived of this essential teaching because they are obliged to leave school before reaching the upper grades where such instruction is given.

This is true especially of most of the children of foreign descent, who are put earliest at productive work by their parents. It is plain, then, that if these children are instructed at all in American ideas of temperance, it must be done early. To leave teaching of these subjects to the years beyond their primary instruction is simply to perpetuate foreignism in relation to the temperance problem.

INCREASE IN PER CAPITA CONSUMPTION EXPLAINED BY IMMIGRATION

People wonder why it is that notwithstanding the growth of total abstinence and the spread of vast prohibition areas, the average per capita use of intoxicants in America nevertheless increases. The recent yearly large percentage of foreign immigration and the out-populating power of it largely explains the matter. The million newcomers of last year (1905) practically all drink intoxicants. Their children, unless taught otherwise, will drink. By the natural process of the greater proportionate number of births among these people now going on, most Americans a few generations hence will consume intoxicants unless our public school instruction turns the tide.

Without being able to give exact figures as to the nationality of the saloon-keepers of the United States, lengthened investigation and observation convinces us it is conservative to say that fully 80 per cent of them are recent foreigners, or of immediately foreign descent. Lists of "wet" signers for local option elections in the saloon interest anywhere in our large cities betray the recent foreign origin of most of them.

All these things show that compulsory scientific temperance education is the immediate weapon with which alone we can prevent the liquor traffic from possessing the land in the future.

FOREIGNERS WELL INSTRUCTED MAKE BEST OF CITIZENS

When foreigners are instructed in the nature and effects of alcoholic beverages and in patriotism, they make the very best of citizens.

Years ago while noting the results of patriotic enlightened common school education upon the foreign-born children of New York, we began to lose our distrust of this element. When in church work in Wisconsin and Michigan, and in subsequent temperance work in the new states west of the Rocky Mountains we came into contact with their great masses of clean-blooded, stalwart, reliable, patriotic Christians and temperance citizens of foreign descent, we came to feel that these same people

were the hope of America. We have no fears of the Germans, Scandinavians, Italians, Irish—or what not—in this country, if their children have been "caught early," as Dr. Johnson said of Scotchmen, and properly trained in American common schools.

Some of the very best Americans we have met are these same foreigners and their children. By the time the second or third generation is reached they often seem to beat the native stock. Transplantation, new blood, new ideas, new atmosphere, new education, with a good foreign basis to work upon—the result is a noble race of men and women.

THE SALVATION OF OUR COUNTRY



"A child more than all other gifts that earth
can offer to declining man.
Brings hope with it and forward-looking thought."

So this scientific educational work is a God-send to the United States. It takes the raw material for the best type of Americans, and molds it into shape. Let the system be worked. Let all the grades of our schools employ it, especially where most objection is made—among the children of foreigners—for just there it is most needed. It is the highest patriotism and statesmanship to use this instruction early in all the grades of our schools, especially in the grades most frequented by the children of immigrants.—*American Issue.*

THE HEART-BEAT OF THE RACE

"The blood of the people! changeless tide
through century, creed and race,
Still one, as the sweet, salt sea is one, though
tempered by sun and place.

The same in ocean currents and the same in
sheltered seas:

Forever the fountain of common hopes and
kindly sympathies.

Indian and Negro, Saxon and Celt, Teuton and
Latin and Gaul,

Mere surface shadow and sunshine, while the
sounding unifies all:

One love, one hope, one duty theirs! no matter
the time or kin,

There was never a separate heart-beat, in all
the races of men."

—*Selected.*

Courtesy of the *American Motherhood*. See combination club offer.

School Physiology Journal

Copyright Applied For

Single Subscription.\$0.60 a year

CLUB RATES

Clubs from 5 to 50.\$0.50 each
Clubs of 50 and over......40 each

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

THE NEW PATRIOTISM

WHAT does twentieth century patriotism stand for? Defense of the nation from destructive tendencies in its physical, moral and social life, because we have learned that such integrity is essential to political existence. How to strengthen moral fiber, how to give every man a fair chance to work out his destiny as a self-supporting and self-respecting citizen, how to make Americans out of eager aliens, how to guard the nation against the race degeneration threatened by child-labor, social vices, and alcoholic and narcotic habits—these are the problems on which present-day patriotism is testing its mettle, and to which it summons the loyal sons and daughters of the Republic.

Much of this work is educational. Already the public training of boys and girls to habits of health and sobriety has been entrusted to the American teachers. Already their splendid work has begun to show results. Yet a great wave of ignorance and prejudice in these matters sweeps in yearly from other shores.

"To the immigrant child," says a recent writer, "everything American is good and right." He is observant of American ways, susceptible to American habits and manifests a certain independence of his native customs if those of America appeal more strongly to him. Here is an advantage to be grasped. The boy who learns at school that success in this new country depends much on good health and abstinence from injurious habits will profit by his lesson as rapidly as possible and take pride in doing so.

This result will not be accomplished, however by mere moralizing on this subject at irregular intervals. The ideals held up must be clear-cut, the instruction made practical, systematic and business-like, so that the impression left will be that such knowledge is as important to the citizen of America as ability to read and to write.

Is this prosaic patriotism? Not if one gains and keeps the wide outlook on national life, with an eager eye, a sympathetic heart and an intelligent purpose. Ignorance and prejudice spell opportunity to such a one, and twentieth century patriotism means to him no mere emotion, but deliberate choice, decision and action in the joy of serving one's country in the needs of his generation.

THE CAMPAIGN FOR HYGIENIC AND TEMPERANCE INSTRUCTION IN BRITISH ELEMENTARY SCHOOLS.

IN response to a request from the Committee of the medical profession (formed in 1903) for the furtherance of the teaching of hygiene and temperance, the President of the Board of Education, the Right Hon. Augustine Birrell, M. A., received on Nov. 12th, a deputation representing the Committee, the British Medical Association, and the Advisory Board for the teaching of hygiene and temperance.

The Deputation presented to Mr. Birrell a memorandum which read in part as follows:

"It is now fully recognized that Teaching in Hygiene and Temperance in Public Elementary Schools is essential for the development of the well-being and happiness of the nation at large.

"(See Petition to the Board of Education, presented July, 1904, by nearly fifteen thousand Medical Practitioners, and Report of the Committee on Physical Deterioration, 1904).

"We now venture to urge:

"(1) *That instruction in Hygiene and Temperance be specifically introduced in the curriculum of the Code.*

"(2) *That facilities for Special Training in these subjects be afforded to teachers.*

"(3) *That these subjects be reported on by H. M. Inspectors.*

"In urging the necessity for immediate action, we venture to call attention to the prominence given in our Colonies and in foreign Countries to the national Teaching of Hygiene and Temperance, and of the results of alcoholism."

The memorandum was signed on behalf of the Medical Profession formed (1903) for the furtherance of the teaching of Hygiene and Temperance in Elementary Schools, by Sir W. H. Broadbent, Chairman, John Tweedy, A. Pearce Gould, Sir Lauder Brunton, Prof. A. Sims Woodhead, Sir Thomas Barlow, W. McAdam Eccles, M. D., Sir Victor Horsley.

IMPORTANCE OF TRAINING TEACHERS

SIR THOMAS BARLOW, spoke of the imperative necessity that teachers themselves be taught. There is no desire to make the subject a sentimental one, and it is hoped that it will be carried out with sound sense and in a business-like way. In order to teach science, the teachers themselves must have a thorough grounding, not only in principles of physiology, but also in the methods of instructing children.

MEDICAL INSPECTION OF SCHOOL CHILDREN

DR. JAMES MACDONALD, the Chairman of the Representative Body of the British Medical Association presented the following resolution:

"That the Representative Meeting of the British Medical Association expresses its sense of the great benefits that will accrue to England and Wales by the adoption by Mr. Birrell, in the Education Bill at present before Parliament, of the compulsory medical inspection of school children and the establishment in the Education Department of a medical bureau." If the measures recommended in the Memorandum submitted were adopted, a great advance would ensue in the future stamina of the race.

FUNDAMENTAL IMPORTANCE OF THE INSTRUCTION

DR. LANGLEY BROWNE, Chairman of the Council of the British Medical Association, said that there is no difference of opinion among doctors in regard to the advisability and advantage of including the systematic teaching in the schools of the subjects by the teachers themselves and not by occasional lecturers. Every teacher should have to take the subjects up, and should not be advanced beyond the stage of pupil teachers without mastering hygiene and temperance.

It was stated that the curriculum is already full, but he believed that these two subjects are of the greatest importance, and it will not matter if a child grows up without being able to spell otherwise than phonetically, and without knowing all the details concerning weights and measures, provided he is well instructed in hygiene and temperance.

A PLEA FOR THE RACE

SIR LAUDER BRUNTON said that for twenty-five years he had seen out-patients at St. Bartholomew's Hospital, and he calculated that he had seen 100,000 separate cases. Among them, were a great number of infants brought by their mothers; some of them were like living skeletons, and that, in a great measure, is due to the mothers' using dirty feeding bottles, ignorant of the fact that they are poisoning their children.

Too often the principle acted upon by these ignorant women is "mother a bit and a sup, and baby a bit and a sup," in spite of the fact that the "bit" often consists of a red herring, and the "sup" of gin and water. The consequence is that babies are dying by multitudes, and that will continue until the mothers are taught how to rear them.

Teaching ought to be begun at school, because the mind is most receptive in childhood. Further, babies are very often left to be tended by quite small children. He urged Mr. Birrell to do what he could to remove this blot from the civilization of the country.

Professor CLIFFORD ALBUTT, a representative of the International Association for the Pre-

vention of Tuberculosis, drew attention to the awful waste of child life in Great Britain. For every dead child might be reckoned at least one more who survived with stunted body or perverted constitution.

He appealed to Mr. Birrell to contrive some method of instruction in hygiene whereby individual will be fortified for self-government and self-determination on the lines of healthy growth, for the control of external conditions, as far as those may lie within the personal opportunities of those concerned, and for the intelligent co-operation in the collective amendment of those external conditions.

The provision of the external means of healthy life is continually thwarted by the lack of personal co-operation and intelligent use of public improvements. The individual will must therefore be built up in accordance with the laws, conditions, and materials of health. The principles of bodily health must be made an integral part of the education of the child.—*British Medical Temperance Review*.

"SEND THE MULTITUDE AWAY!"

BY DR. J. J. RIDGE, ENFIELD, ENGLAND

IT was a most influential deputation which waited on the President of the Board of Education, the Right Hon. Augustine Birrell, M. P., to press upon him certain important points in connection with the teaching of hygiene and temperance in elementary schools.

This deputation was not simply a temperance demonstration. The majority of the fifty or sixty ladies and gentlemen present were not, we have reason to believe, total abstainers; but all were agreed as to the necessity of more direct instruction in the principles of hygiene, which must include, and does include in the minds of all reasonable men, such information on the subject of alcoholic liquors as is suited to children and will lead them rather to avoid than to take such beverages.

The matter, therefore, was presented to Mr. Birrell from several points of view, and the speeches made were short, crisp and to the point. They were the expression of men and women who are experts in the subject, backed up, we may say without exaggeration, by almost the entire medical profession in this country. In the short space of five and thirty minutes, it would have been impossible to crowd in more solid sense and powerful argument for a matter which vitally affects the welfare of the nation. If there was anything passed over on this occasion, it was, perhaps, the calling attention to the fact that the teaching, which we desire here, is already given throughout the whole of

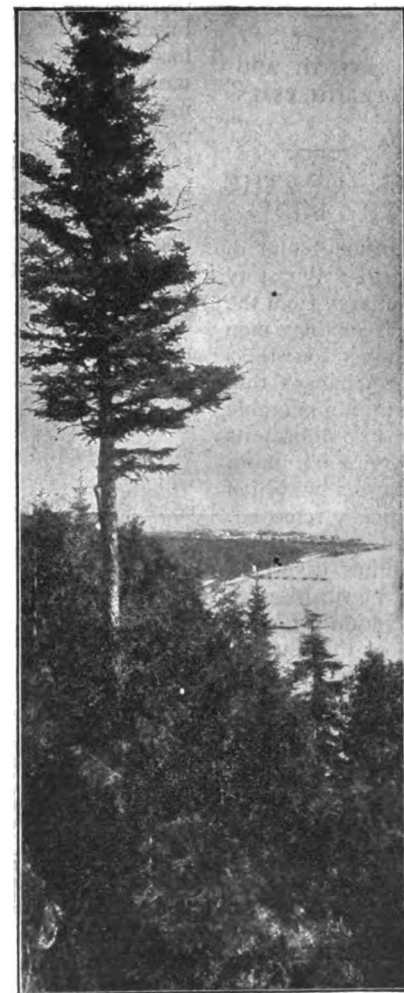
the United States of America, and in several European States. In view of the competition which exists among the nations of the world, Great Britain cannot afford to lag behind in this matter. The increase of hygienic conditions and habits, and the return to sobriety, are absolutely necessary unless our nation is to be outrun in the race.

We have, then, nothing but praise for the deputation and its deliverances. We are inclined to think that Mr. Birrell has been too much taken up with the new Education Bill to give proper time and thought to this subject. But even so, we cannot help being profoundly dissatisfied with his reply. He has the reputation for wit, but it was scarcely shown by his remark that if total abstinence were introduced into the teaching it would cause considerable emotion at home.

We may add that he also stated, that if it were so taught, "the local brewer, who pays taxes, would object." Is that a reason? Are we to wait for this instruction until the brewers and publicans [saloon-keepers] give their consent? They have not waited in other countries; why should we?

There will always be some objectors, although as a matter of fact, there are very many publicans who bring up their children as total abstainers and even send them to Bands of Hope. This excuse will not do; we dare not, and we will not take it as a final answer. Mr. Birrell must reconsider the matter, and understand that he and his colleagues were elected, not to provide future customers for the brewer, and future candidates for the workhouse, the prison and the asylum, but to save the children from those habits which have ruined and destroyed countless thousands.—*The British Medical Temperance Review*.

"After reconstruction, the next great work before us is the prohibition of the liquor traffic in all of the states and territories."—ABRAHAM LINCOLN.



"Shaggy shades of desert-loving pine." Whose emerald scalp nods to the storm."

*By kind courtesy of Michigan Central Railroad.

EFFECTS OF ALCOHOL ON THE KIDNEYS

Diseases of the kidneys are far more common and severe in those who drink much wine, lager beer, and eat rich food than in the temperate and abstemious.—DR. M. L. HOLBROOK, in "Omega," (1900).

All forms of irritation of the kidneys and urinary passages are usually aggravated by the use of alcohol. Even healthy kidneys are irritated by moderate doses of alcohol—PROF. BINZ, University of Bonn.

Glazer, by extensive experiments has found that alcohol produces irritation of the kidneys, exudation of leucocytes, casts, "an unusual amount of uric acid crystals and oxalates."

Chittenden, by experimenting on dogs that had been kept under the influence of alcohol for eight or ten days, found the elimination of uric acid increased 100 per cent. above the normal quantity.

Pitt states that the kidneys of forty-three per cent of hard drinkers are hypertrophied.

In relation to the causation of Bright's disease, Flint states that "as a primary effection it occurs especially in persons addicted to intemperance."

Wood and Fitz mention alcohol among the causes of chronic interstitial nephritis.

Gentles represents the alcoholic kidney in a cirrhotic condition similar to that of the cirrhotic liver.

August Smith states that alcoholic kidneys are either swollen or contracted.—J. W. GROSVENOR, M. D., N. Y., in *Journal of Inebriety*.

EFFECTS OF ALCOHOL ON THE LIVER.

Alcohol undoubtedly plays an important part in the production of cirrhosis of the liver.—*The London Lancet* (1900).

Following the ingestion of alcoholic beverages the poison is quickly carried into the liver after absorption has taken place, and its early action is to produce a congestion of this organ. Under the continued action of alcohol, a slowly progressive and usually fatal disease (cirrhosis)

is induced. It is due to a peculiar action of alcohol on the connective tissue. The liver is divided into a large number of lobules, each of which is composed of a group of the working cells of the organ. Around each lobule is thrown a network of connective tissue. The action of the alcohol is to cause a large number of new connective tissue cells to be thrown out. These ultimately contract, and in this way cause pressure on the delicate cells composing the lobule, resulting in its shrinking and partial destruction. The whole organ finally becomes shrunken and hardened; and death eventually ensues. The same process may attack the kidneys, causing a chronic and incurable form of Bright's disease.—DR. J. M. ARNOLD.



Grammar Lessons

SEVENTH AND
EIGHTH YEARS

HOW NATURE DISPOSES OF THE WASTE PRODUCTS OF THE BODY.

PERHAPS nothing in the whole realm of nature is more fascinating than the story of the transformation of energy from the sun's heat into the energy which enables men to live, move and accomplish stupendous tasks in the world's work. But the changes that transform grains and meats into innumerable body cells, each moving easily to perform its own established vital function, are not more wonderful than those other processes by which the waste materials are systematically removed.

Since nature is a great economizer of space and of energy, and often requires divergent duties of an organ, we need not be surprised to find that nutrition overlaps excretion; for instance, the principal function of the liver is that of digestion, while a secondary, but highly important one, is the separation of waste and poisonous matter from the blood. Other organs of excretion, like the skin and lungs, also perform other duties, but their work in this capacity may properly be considered in this connection.

The presentation of the physiology and hygiene of the liver and kidneys being more difficult, those topics will be treated more in detail.

HOW WASTE MATERIALS ARE FORMED

Since the processes of excretion are so intimately connected with those of nutrition and assimilation, begin the lesson by briefly reviewing the latter.

How many and what kind of foods. To what purposes is each of these sorts applied? What essential cell food do we get from the air? In what medium are these materials distributed over the body? At what point do the foods cease to be items of expense in the bodily energy, or work account? Bring out the point that up to the time the cells assimilate the substances they need, the food has actually caused a loss of power, because the preparation of the foods, their mastication, digestion and

absorption have all required an expenditure of energy or work.

Compare the oxidation or burning of coal in an engine to the oxidation of food materials. Show that the combustion of coal in the engine produces heat, and motion (work) and leaves a residue of solid waste in the form of ash, and of gaseous matters in the form of smoke and carbon dioxide; that similarly the oxidation or burning of food materials in the cells produces heat and working power which enables us to move and think. Every action, whether of muscles, brain, or digestive organs, depends upon oxidation and hastens it, thus increasing the amount of body waste. Notice, too, that just as the coal fire refuses to burn when choked with ashes, so the vital spark expires when the body can no longer throw off its waste.

What waste compound is formed from nitrogenous foods? From albumins? From carbohydrates? Show that most of the more solid waste products from oxidation are thrown off in the form of urea, the liquids in water, and the gases in carbon dioxide.

Refer briefly to the second class of wastes, viz.: the fibres of vegetables, meats, etc., which the digestive system cannot dissolve, and so must be disposed of as refuse.

ORGANS THAT ELIMINATE WASTES

We have seen that the wastes consist of liquid (water); a gas (carbon dioxide), and solids in the form of urea, and the residue of undigested foods. In what ways do all but the last enter the blood?

Which organs eliminate the liquids? Which one the carbon dioxide? The urea? The food wastes?

THE LARGE INTESTINE

Review the general structure of the large intestine. Bring out the points (1) that it is a pouch about five feet long, in which wastes from the liver and all portions of indigestible foods, such as fibres of meat, vegetables, pickles, etc., as well as other foods which the digestive organs were unable completely to dissolve, are stored till the body disposes of them; (2) that if this waste remains too long (it should be discharged at least once every day), fermentation is apt to take place and poisons formed which are absorbed and carried to all parts of the body, causing headaches and nervous troubles, and sometimes serious diseases like appendicitis; (3) that constipation is due to one or more of three causes, viz., improper diet, clothing that compresses the liver and vital organs, or causes too much weight to be suspended from the waist, and lack of proper exercise; (4) that drugs usually produce worse

conditions than those they are intended to cure, and that suitable exercise, drinking plenty of water, regulating the diet by substituting fruits and grains for the pastries and other more or less indigestible and constipating foods, will usually prevent such conditions.

THE SKIN

Judging from the appearance of the skin on a very hot day, what is the nature of the chief excretion of the skin? Name and describe the glands which secrete this moisture. How is it separated from the blood? What slight traces of solids? How much water is thrown off every day? How does this amount vary? (1 1-2 to 4 pints.) Under what conditions? What other and very important purpose is served by the excretion of perspiration? What is the result if the pores are allowed to become clogged? Speak of colds as being due largely to the lack of action of the sweat glands, part of the poisons thus retained being thrown off in the form of mucous from the membranes lining the nose. Why will a good "sweat," taken when a cold starts, often break it up?

What other organ has extra work thrown upon it when the skin does not perform this function well? In what ways can the skin be helped to do its full share of this work?

THE LUNGS

Review structure of the lungs; paying special attention to the membraneous air sacs through which the carbon dioxide is filtered from the blood.

How large is the surface of blood exposed to the air in the cells? (according to Prof. Jegi 1500 square feet). What does this indicate regarding the importance of the elimination of gaseous impurities? Does any other organ assist in this work? Point out that the skin helps a little, but throws off only about 1-50th as much.

How can exercise increase the efficiency of

the lungs as excretory organs? What is the effect of compressing the chest walls with tight clothing? How does imperfect elimination by the lungs pave the way for serious illness, including tuberculosis? In what way does the use of alcoholic drinks interfere with these processes? The use of tobacco, and especially cigarets? Is it fair to mothers, wives and sisters, who choose not to injure their own health by smoking, for fathers or sons to force them daily to inhale quantities of air polluted by tobacco smoke?

THE KIDNEYS

What part of the whole body is water? Upon what fluid does every tiny cell of the body depend both for the food with which it works and the removal of its wastes? Show that the body needs at least 2 1-2 qts. of fresh water daily and ought to throw off an equal amount. What two organs already studied eliminate fluids? What organs do still more of that work? If the lungs excrete 1-2 pt. of water and the skin about 1 1-2 pts. how much is left for the kidneys to dispose of? What poisonous waste is chiefly taken care of by these organs? From what foods does it come?

What other organ separates most if not all of the urea from the blood? Recall

the arrangement of the layers of the skin and the sweat glands and show that the kidney is not unlike a portion of skin folded inside out to make a bean-shaped organ and that the separation of fluids and urea from the blood is also similar to the action of the sweat glands.

If desirable, the teacher may procure a sheep's kidney; or a blackboard drawing or a chart may be used to illustrate the size, shape, and main characteristics of the organs, together with their important blood vessels. What is the cortex? The medulla? The capsule? How is the fluid filtered from the blood and how drained off? What is the organ in which it is held until eliminated? If the kidneys are



"Lo, sifted through the winds that blow,
Down comes the soft and silent snow,
White petals from the flowers that grow
In the cold atmosphere."

disabled what organ tries to do their work? What advantage in drinking plenty of pure water?

Emphasize the importance of keeping the kidneys in good condition and show how exposure to cold, failure to keep the skin and pores open, use of too much meat, rich foods and condiments may cause kidney disease.

Lead the class to see that alcoholic drinks may seriously affect the healthy action of these organs: (1) (in the case of beer) by overwork in disposing of abnormal quantities of fluid as well as the effect of the alcohol; (2) by changing their structure so they cannot do their work well; (3) by dilating the capillaries going to the glands and tubules thus causing congestion and inflammation; (4) by irritating them till in some cases "Bright's Disease" is brought on.

THE LIVER

A little five year old asked his mother if our Evers make us live. She replied "Oh no, but they certainly do have a great deal to do with our living." This fact is amply proved by the names popularly applied to the liver such as the "guardian of the body," "the repair shop," "savings bank," "a manufactory," and "the crematory for certain waste products that come from the cells." It is all of these. Set the class to finding out from their text-books, reference books, and perhaps from their family physician, in what ways each of these things is true and supplement their knowledge with any points they may have omitted.

What would its size suggest as to the amount of work it has to do? What is the explanation of the fact that some poisons like snake poison will not cause death if taken into the stomach? Show that when they are carried to the liver the cells separate the poison and changes it so that it can be thrown out like other harmful wastes.

What is the structure of this organ which is able to do so many kinds of work? Where is it located? What is its size and shape? Procure a fresh chicken liver, with the accompanying arteries and veins left, say 1-2 inch long, and show to the class to illustrate the general shape of the lobes and the attachment of the blood vessels. Let the class name and locate the principal blood vessels.

Prepare a thin cross section of beef liver, mount on glass and allow class to examine under magnifying glass (if the school has none the teacher may be able to borrow one from a friendly doctor, or a pocket lens will be of some service.) Note the tiny lobules no larger than a millet seed. Let members of the class reproduce drawings of a lobule free hand or by trac-

ing* chart or text-books or from black board sketch. Professor Coleman says that if the pupil understands the circulation of one lobule, he will understand *the circulation of the entire liver for the lobule is the liver in miniature*. He likens the lobule to a wagon wheel, the rim corresponding to the capillaries of the portal vein and hepatic artery circulating around the lobule.

The spokes correspond to the two kinds of capillaries united and on the way to the hepatic vein in the hub, which will take the blood away from the liver. Between the spokes are located the hard working liver cells which get oxygen and food from the capillaries in the spokes and relieve themselves of impurities by means of the finest bile ducts, which begin among the cells, and empty into the tiny bile duct which is in the rim.

What becomes of the bile thus secreted? Of the poisonous and waste substances excreted by the liver? Show that the urea is sent by the blood vessels to the kidneys, and other wastes are carried by the bile into the large intestine. What is the effect upon the liver of eating too much candy or sweets? Of too much meat?

If the skin has a yellow tint and the eyes are not so bright as they should be, or if one has bilious spells or sick headaches, what is likely to be the cause? If the liver has got behind on its orders in taking care of unnecessary food supplies what would be the reasonable remedy? Why do indolent people often suffer from torpid liver? What would be the effect upon this organ of compressing the body at the waist line from 3 to 6 inches and keeping up the pressure sixteen out of twenty-four hours.

Refer to the fact that when alcohol is drunk it enters the circulation almost immediately and the portal vein carries it nearly undiluted to the liver. Lead the class to see (1) that since it is the particular business of the liver to separate poisons from the blood, the ingestion of even small quantities of alcohol puts considerable extra work upon this organ; (2) that by robbing the cells of oxygen they need for vital operations they cannot do their work as well and some poisons that should be filtered out remain in the blood; (3) alcohol does not build up useful tissue but when taken in the weaker form of beer or wine is apt to promote deposits of fatty matter in the cells; (4) the use of distilled liquors often causes the condition known as "hob nailed" liver.

*It is a fine plan to require such drawings of many anatomical features such as sections of bones, the heart, eye, etc., as a part of class work upon which marks are given.

NOTE—For authoritative quotations see page 93.

TRUE PATRIOTISM AND ALCOHOL.

HIGH SCHOOL

WHILE in the lower grades the physiological side of the alcohol question is, very properly, most emphasized, the high school student will get both pleasure and profit from taking a wider outlook upon the question in its bearings upon individual and national life.

During this month when we call to mind the memory of those preeminent patriots Washington and Lincoln, it is well for the young student to seriously ask of himself what true patriotism requires of a citizen; in what ways alcohol destroys the ideals exemplified by these great Americans and tends to arrest the achieving power of the people and to weaken the foundations of free government.

The following topics are suggested as subjects for research, the results of which may be embodied in papers, in class discussion or debate.

Bring out the influence of alcohol in opposing real patriotism by showing it in antithesis to what our country may justly claim of its citizens. Articles bearing on the various phases mentioned here will be found in this and preceding issue of the JOURNAL.

WHAT TRUE PATRIOTISM REQUIRES OF A CITIZEN

Physical Strength that he may do his own work well and pass on to his children, the future citizens, bodies untainted by narcotic bred diseases.

Alcohol tends to impair every function of the body; to launch hereditary tendencies to unsound physical and mental development, thus bringing on race deterioration as in France, Germany, England, etc.

Mental Strength that his brain may be at its best to enable him to examine, judge, and act wisely and conscientiously upon the policies of municipal and national government—be fit to be a "citizen king."

Alcohol tends (1) to injure intellectual ability;

(2) to decrease the quality and quantity of the output; and (3) to impair judgment.

Moral Strength; Alcohol tends (1) to undermine will power; (2) to destroy moral stamina; (3) to extinguish higher ideals; (4) to induce immoral action.

Social Strength, that in his relations to his fellow men he shall set an example of civic righteousness, and work for the betterment of his country.

Alcohol (1) ruins happiness of homes and increases divorces; (2) stimulates or creates political corruption; (3) breeds crime.

Economic Strength that he shall by his own economic efficiency support himself and add to the sum total of the wealth of the country.

Alcohol (1) encourages thriftlessness; (2) decreases earning capacity; (3) is a fruitful cause of child labor; (4) causes poverty, insanity and crime, hence is responsible for a great loss to the nation through necessity of supporting almshouses, reformatories, asylums and prisons.

THE liquor industry pays only 8 per cent for general labor, while manufactures pay 20 per cent for labor. If the consumer pays one hundred dollars for useful articles he will give employment for more than eight times as many days; he will pay nearly five times as much wages; and he will demand from other industries four and one-half times as much raw material as if the one hundred dollars were spent for liquor.—*The Saloon Problem.*

THE NEW YORK STATE CENTRAL COMMITTEE which last year sent the SCHOOL PHYSIOLOGY JOURNAL to all city superintendents, superintendents of villages with more than 5,000 population, all superintendents and principals of graded schools, and to each county commissioner of schools, has renewed the list for another year and accordingly all those educators will receive the JOURNAL regularly.

THE SUFFOLK

ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

234 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

AN ATTRACTIVE OFFER

THE SCHOOL PHYSIOLOGY JOURNAL, (16th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "State Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET

BOSTON MASS.

Digitized by Google

ARE YOU A Primary-Kindergarten Teacher?



That is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the ONLY HOUSE IN THE U. S. putting up Kindergarten material especially for Primary Schools. If you will send for free catalogue now we will send you of charge Instructions for using Kindergarten material in primary schools, the regular price being 25 cts. Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.



DOES 40% SAVING INTEREST YOU

School Physiology Journal Club Offers

Every group must contain the SCHOOL PHYSIOLOGY JOURNAL. Magazines may be sent to different addresses. Subscriptions may be new or renewals. Many more combinations for the asking.

FAMILY GROUPS.

World's Work, ‡	\$3.00	OUR PRICE \$3.25
McClure's, ‡	1.00	
Delineator, ‡	1.00	
Physiology Journal, . . . . .	.60
Review of Reviews,	\$3.00	OUR PRICE \$3.10
Woman's Home Companion,	1.00	
Success,	1.00	
Physiology Journal, . . . . .	.60
Review of Reviews,		OUR PRICE \$3.75
Any two of Class A,		
Any one of Class B,		
Physiology Journal,		

YOUNG FOLKS' GROUPS.

C. E. World,*	\$1.00	OUR PRICE \$2.40
Or Little Chronicle,	1.50	
Or American (Leslie's),	1.00	
American Boy,	1.00	
Our Little Folks (new),	1.00	
Or Success,	1.00	
Physiology Journal,60	

TEACHER'S GROUP.

Normal Instructor,	\$.75	OUR PRICE \$1.50
Primary Plans,	1.00	
Physiology Journal, . . . . .	.60

FARM GROUPS.

Farming,	\$1.00	OUR PRICE \$2.00
American Farmer, . . . . .	.40
Reliable Poultry Journal, . . . . .	.50
Kimball's Dairy Farmer, . . . . .	.50
Art Portfolio (6 pictures),	1.00	
Physiology Journal, . . . . .	.60

CLASS A.

C. E. World,*	\$1.00	Any 1 with JOURNAL \$1.10
Success,	1.00	
Woman's Home Companion,	1.00	
American (Leslie's),	1.00	Any 2 with JOURNAL \$1.75
Our Little Folks, (new)	1.00	
American Motherhood,	1.00	
Primary Plans,	1.00	Any 3 with JOURNAL \$2.35
Teacher's World,	1.00	
Farming (with accident policy),	1.00	

CLASS B.

American Boy,	\$1.00	Any 1 with JOURNAL \$1.00
Everyday Housekeeping,	1.00	
Normal Instructor, . . . . .	.75	Any 2 with JOURNAL \$1.50
Designer, † . . . . .	.50	

CLASS C.

Suburban Life,	\$1.50	Either with JOURNAL \$1.50
Little Chronicle,	1.50	

‡ Single subscriptions for full price only.

*Add 10 cents if this is chosen.

†Less 10 cents if this is chosen.

Anti-Cigarette Helps.

Power of the Tobacco Habit, \$.20.

Timely booklets on a timely topic. Teachers! Parents! Do you know what can be said against the tobacco habit? These pamphlets will tell you.

Boy and the Cigarette, \$.05.

Tobacco: why the cigarette is especially

harmful, \$.20.

Cigarettes and Tobacco, \$.05.

SAMPLES: Samples of each \$.40.

Anti-Alcoholic Helps, \$.10.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Important Place of Physiology in the School Curriculum : : By Prof. F. M. Gregg

Alcohol as it Affects the Brain and Nerve Tissues : : By Vaclav H. Podstata, M. D.

Boston Public Lib

THE SCHOOL PHYSIOLOGY JOURNAL

MAR 29 1907



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVI. NO. 7
MARCH, 1907

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid to any address on request.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.
\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

• CONTENTS •

	Page
Important Place of Physiology in the School Curriculum BY PROF. F. M. GREGG	97
Alcohol as it Affects the Brain and Nerve Tissues	100
BY VACLAV H. PODSTATKA, M. D.	
Shojo-hi, a story from the Japanese	102
Primary Lesson—Second Year—Life Story of the Barley	104
Editorials	107
Grammar Lesson—Fourth Year—Muscles	109
High School Lesson—The Nervous System and Life	112

AN ATTRACTIVE OFFER

THE SCHOOL PHYSIOLOGY JOURNAL, (16th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "State Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET,

BOSTON MASS.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVI

BOSTON, MARCH, 1907

No. 7

An Easter Song

By Richard LaGallienne

ARISE my heart, and sing thy Easter song!
To the great anthem of returning bird,
And sweetening bud, and green ascending
blade,

Add thou thy word.

Long was the winter and the waiting long;
Heart there were hours, indeed thou wert afraid—
So long the spring delayed.

Shut in the winter's alabaster tomb,

So white and still the sleeping summer lay
That dead she seemed;

And none might know how in her magic side
Slept the young Spring, and moved and smiled
and dreamed.

Behold she wakes again, and, open-eyed,
Gazes in wonder, 'round the leafy room,
At the young flowers. Upon this Easter Day

Awaken, too, my heart, open thine eyes,
And from thy seeming death thou, too, arise.

Arise, my heart; yea, go thou forth and sing!
Join thou thy voice to all this music sweet
Of crowding leaf and busy, building wing,
And falling showers;
The murmur soft of little lives new-born,
The armies of the grass, the million feet
Of marching flowers.

Now sweetly blows the Resurrection horn
Across the meadows, over the far hills!
In the soul's garden a new sweetness stirs,
And the heart fills,

And in and out the mind flow the soft airs,
Arise, my heart, and sing, this Easter morn;
In the year's resurrection do thy part—
Arise my heart!

From Success.



THE IMPORTANT PLACE OF PHYSIOLOGY IN THE SCHOOL CURRICULUM

BY F. M. GREGG, A. M.,

Associate Professor of Biology, State Normal School, Peru, Nebraska

IN late years, we have been making much in this state of what are termed the "five essentials," namely, reading, grammar, arithmetic, geography and history. The question we are to consider here is the place and relative importance of physiology in our public school curricula.

It is assumed that we are not to think of physiology in its purely technical sense of biological function, but in a broader and more popular sense. Even broader than as defined by the boy in his examination paper, who said that "physiology is a study about your bones, stummick, and vertebry." We shall extend the term to embrace anatomy, physiology proper, hygiene, and perhaps something of pathology, however much it may offend the logical purists in science to do so.

SHALL PHYSIOLOGY BE OUR SIXTH ESSENTIAL?

The requirement for the teaching of physiology and hygiene in our public schools has been on the statute books of this state for nearly twenty-two years. In that interval, the teachers have given sufficient attention to the subject to enable them to satisfy the requirements of the law in obtaining a certi-

cate. It is to be feared that beyond this, there has been no great interest in the subject. In the main, however, some excellent work is being done in the teaching of physiology, but I have sometimes wondered whether it might not possibly be true with respect to some schools, at least, that the subject of physiology is the least understood, and perhaps worst taught of all subjects presented in the course of study. A few years ago, the New York State Science Teachers' Association, after making inquiry among certain leading supervisors of the state, and among the students of two normal schools, adopted a resolution, which was by no means unanimously agreed to but which still represented the opinion of the majority, to the effect that the teaching of physiology is hardly worth the while.

In our own state normal schools, eight weeks of study in addition to what is given in the infra-high school grades, is deemed sufficient to prepare the teachers for the work of teaching this subject. It is not particularly surprising then that the teaching sometimes degenerates into a sort of reading lesson out of some text book on physiology.

SHALL PHYSIOLOGY BE OUR SIXTH *essential*?

In other words, shall it be any essential at all?

Immediately following the previously noted report of the New York State Science Teachers' Association, a committee composed of a large number of representative citizens, known as the New York State Central Committee, made a thorough canvass of the state and secured from parents and teachers a vast amount of testimony to the effect that the school children *do* talk over at home, and *do* put into practice the teachings in the books on physiology which they study. A little later a similar canvass was made in Illinois with a similar result.

In 1882, the first state law was passed making obligatory in the public schools the teaching of physiology and hygiene, and the effects of alcohol and other narcotics. The spread of this movement was made complete in 1901, when the last state came into line with a similar law.

Now it so happens that between the returns of the United States census for 1890 and those for 1900 there is shown the very astonishing increase in the average duration of human life of 4.1 years! Is it claiming too much to say that a part at least of this improvement in conditions that make for better health and longer life is due to a dispensing of knowledge about that very sort of thing?

More than that, during the 25 years of compulsory physiology teaching there has been a steady increase in the territory that excluded the sale of intoxicants as a beverage until, today, one-half of Continental United States is free from the curse of the saloons.

Permit me to cite one case to illustrate the extent to which education may have been a factor in our changing conditions. In my native village in Northern Ohio, twenty-five years ago (then and now a town of scarcely 1,000 inhabitants), there were six saloons, and a decided majority of the people who declared in favor of alcoholic beverages and whose practice was not inconsistent with their declaration. When I visited that village last summer I found it dry, decidedly dry, enthusiastically dry, and I know of no factor that has operated to bring about the change other than the education of the younger generation.

The absence of drunkards among the peoples of the tropics is well known, and it has been suggested by Dr. Ross, now of the University of Wisconsin but until recently of the University of Nebraska, that the condition is due to the fact that through long acquaint-

ance with the fruit of the vine, the law of natural selection has operated to consign to oblivion those with uncontrollable appetites, while the existing generation are descendants of the more temperate among these ancestors. With the Anglo-Saxon and Teutonic peoples, the introduction to the vine has been more recent and "in the last thirty years alcohol has destroyed 7,500,000 human lives, in Europe alone," more than were destroyed by all the wars of the whole of the 19th century.

In America, we contribute annually nearly 100,000 lives in the same way. Assuming the theory above stated to be true, shall we Teutons wait for nature's process of natural selection to free us of the drink habit as did the peoples of the tropics, or shall we continue to apply the methods of education, only a little less *perfunctorily* and a little more *earnestly*?

SHALL PHYSIOLOGY BE OUR *sixth* ESSENTIAL?

In a wheat field near the town of Novara, in northern Italy, says David Starr Jordan, may be seen a pyramid of human bones collected by farmers as they have plowed them up year by year, and over the pyramid has been placed a canopy to keep off the rain. This pile of bones represents all that is left of the physically perfect bodies of young men of Italy and Austria who met at Novara to kill each other over a matter in which they had little concern,—Shall the Prince of Savoy sit on his unstable throne, or yield it to another? "It matters not the decision," continues Dr. Jordan, "history doubtless records it as she does many matters of less moment." But here is a biological and physiological fact of infinitely greater importance than any ordinary fact of *history*, viz., that this pile of bones represents what has been going on through the centuries and milleniums—the destruction of the best blood of the nations, leaving at home the weaklings, the cowards, and the physically imperfect to become the sires of a succeeding generation. Little wonder that Rome fell, for there were no real *men* left, and little wonder it is that the French army is today said to average two inches less in height than it did in the days of the Napoleonic wars.

If it be true that history repeats itself, why give such emphasis to the study of *history*, for the cycle of events will be uninterrupted anyway? What we need to make better history is a race of better *men*, and this will not come through a study of *history* as much as it will come through a direct study of conditions that make for perfect manhood.

As a matter of fact, the most influential history is that of the current newspapers and magazines. The newspapers furnish not a little physiological knowledge also, but unfortunately, this comes from the advertising rather than from the news columns. The fact that the brazen advertisements of patent medicine and other venders extract from our people \$100,000,000 annually is in itself a conspicuous sign of the need for strenuous measures to countervail this folly.

SHALL PHYSIOLOGY BE OUR *fifth* ESSENTIAL?

The science of *geography* is not an easy one to define with exactness, but we may assume than in its more practical phases it has to do with the natural and artificial distribution of commodities, letting our word commodities include such things, for example, as healthful localities, pleasure resorts, pig iron and sugar beets. Which shall we rate first in importance, the exchange of commodities or their production?

If the simple logic of facts is sufficient to answer our question, then man as a producing machine comes in as the most important element of production.

The state places a minimum value of \$5,000 upon a man, assuming that at one dollar a day he can earn \$300 in a year, which is the interest at 6 per cent. of \$5,000. The average length of life at the present time is about 40 years, and this means that about 25 out of a thousand die annually, or $2\frac{1}{4}$ millions a year in the United States, so that this day and every day 6,000 of the most splendid productions of an infinite Creator are consigned to the cold, unyielding bosom of Mother Earth. In the light of available statistics, it is not too much to say that fully, if not more than one-half of the deaths result from preventable diseases, so that, in the unsympathetic terms of commerce alone, there

is a loss in the producing capital in our country, at a minimum calculation, of \$15,000,000 every single day.

But more than can be represented by dollars and cents, is the preventable loss to the world of much of its splendid culture, its greatest genius, its rarest exponents of truth, beauty and goodness. There lies in England one who was a great statesman but who now is helpless in body and mind, before the fullness of his time. It has been his boast for 30 years that he never took exercise, whereas the tree-cutting Gladstone was alert, clear-brained and active at the age of 85.

America lost, a few years ago, one of her most brilliant historians at 59, because it was his daily practice to drink several quarts of beer and to remain up night after night, at his labor of unearthing the intricacies of historic fact. We have lost a beloved president because his use of tobacco reduced his resisting power, and a vice-president, because he was unwise enough to dine out late and frequently at banquets where our own good Dr. Bessey had not sent heavenward a petition that the food might prove digestible.

Shall we then study the earth as the home of man before we study man as fitted for a home on earth?



"Do you ne'er think . . . who taught
The dialect they speak, where melodies
Alone are the interpreters of thought?
Whose household words are songs in many keys,
Sweeter than instrument of man e'er caught!"

SHALL PHYSIOLOGY BE OUR *fourth* ESSENTIAL?

When we remember the intimate relation between health and happiness; that poverty, criminality and even sin, are largely diseases preventable to a considerable extent by the proper dissemination of physiological knowledge; when we consider the vast army of physicians whom we employ, at great cost of money and pain, to guess at the seat of our difficulties and hazard a remedy; and when we recall that the American Society of Perfectly Healthy People embraces a membership of:

only a few hundreds in a population of nearly 90,000,000, may we not ask, Shall Physiology be the *Third Essential*?

We have thus far considered only the value of the knowledge content of our subject. Turning, for a moment only, to its disciplinary value as compared with that of the orthodox "five essentials," not one of them conforms more completely with accepted pedagogical ideals, for physiology deals with things and not with words alone, when properly taught; it has to do with the concrete and not the abstract, and ranks high as a sense-trainer; it develops thinking power, because it considers fundamental principles; it is capable of being made as interesting as anything in the curriculum; it involves the requisites for dynam-

ic as well as for static learning; and it lays the foundation for all forms of later education.

There are some other reasons why physiology should be our *second*, even our *first* essential.

For pedagogical reasons, of course we can not place the subject here, but if it be not educational heresy, let us in conclusion name our essential school subjects in about the following order:

First, language which shall include reading, writing, orthography, and grammar; 2d, arithmetic; 3d, physiology; 4th, geography; 5th, agriculture; 6th, history.

—*A paper read before the Nebraska State Teachers' Assn., Dec. 1906.*

ALCOHOL AS IT AFFECTS THE BRAIN AND NERVE TISSUES

BY DR. VACLAV H. PODSTATÁ.,

Superintendent of the Northern Illinois Hospital for the Insane, Elgin, Illinois.

ALCOHOL is unquestionably a direct and powerful poison to the nervous structure. It not only temporarily impairs and prevents the activity of nervous tissue, but in a measure, though at times very minute and almost imperceptible, every dose of it permanently disables the functional activity of those organs.

Biology teaches that all the nervous tissue develops unequally. Certain centers and paths develop earlier than others. Certain high centers never develop in some individuals.

ALCOHOL A NERVE POISON

What is the influence of alcohol upon this organism? No doubt exists as to the effects of large doses. While these are well known and acknowledged, much is being said and argued about the so-called moderate doses.

What is a moderate dose? On the basis of extensive inquiry, it was estimated that a moderate drinker consumes between 80 and 100 grammes of alcohol daily [$2\frac{1}{2}$ — $3\frac{1}{2}$ oz.]. That figure is rather underestimated than otherwise, as can be easily seen from the reports of per capita consumption of liquor in this country since the figures include all women and children.

Accepting that figure, however, for the sake of argument, permit me to state emphatically that such, and even much less average consumption of alcohol in steadily increasing de-

gree affects the nervous organism, commencing, of course, with the most delicate [tissues].

This is all the more important for us to consider, because of a peculiar action of this drug in creating a more or less constant desire for its use, so that habitual and increasing use of it is a rule rather than an exception, after the first few doses have been taken.

How far-reaching are the results of the tremendous alcohol consumption, I can best state to you by referring to the two all-absorbing topics of human progress and human degeneracy. On one side not a day passes but we can obtain evidences of unmistakable progress of our human race. On the other hand, it is a fact that there is an actual increase in mental and nervous diseases, particularly in insanity.

PRESENT DEGENERACY NOTICEABLE

If there were no other reason, this evidence of present human degeneracy would certainly merit our serious consideration. Creation always was and always will be a struggle, and our own struggle is steadily increasing rather than diminishing.

It is perfectly evident that throughout the process of evolution two distinct forces or agencies have been in evidence: one elevating, stimulating and strengthening; the other, degrading, depressing and weakening.

ALCOHOL DEGRADES ALL

Whatever means or agency degrades or weakens one member of the human race is an enemy to us all. The stage of struggle for individual life and welfare has passed. However prominent and apparently all-overwhelming may be the selfishness of individuals and corporations, it is undoubtedly true that there is manifest a genuine effort to fight also for the life and benefit of others.

You have called upon me to speak of one of the most powerful causes of degeneracy. Degeneracy may manifest itself by various physical imperfections, but true degeneracy does not mean large feet, crooked noses, and distorted teeth. The real, dangerous degeneracy means permanent disability of the most highly organized tissue of the body, that is the brain and nervous system in general.

BRAIN INJURY SPOILS BODY

It is evident that whatever harms the brain must necessarily result in injury to the perceptive faculties, the intellect and the emotional control of the individual. In short, whatever harms that organ impairs and often destroys that which makes us what we are, the kings within creation.

Alcohol has been found a direct cause of mental disease in from 10 to 40 per cent. of all cases of insanity, this percentage varying with the race and the spread of the habit. If less than the average, that is, about 20 per cent., is considered the correct figure in this state, it is evident that out of about 9,000 insane now under public supervision and care, 1,800 have suffered their mental collapse through alcohol alone. A very serious topic for consideration indeed, but not the worst.

ALCOHOL INJURES OFFSPRING

Far worse in the opinion of a physician is the influence of alcohol upon the offspring. Dr. Demme, in order to obtain light upon this question, formed two groups of parents, each numbering ten families, which he carefully observed for twelve years. In the first group, were parents who drank alcoholic beverages; in the other, there was no consumption of liquors. The former had a total of 57 children. Of these only ten ($17\frac{1}{2}$ per cent.), were fully normal. The remainder suffered from diseases and mal-developments, all of them pointing to degeneracy. Twenty-five of the children died within the first few months of life.

In the other group, there were 61 children. Of these only 5 died within the 12 years.

Four of the children suffered later from diseases of the nervous system and two had evidences of mal-development. The remainder, that is, 50 children (81.9 per cent.), remained entirely healthy.

It would be superfluous to say more regarding the effects of alcohol beyond a possible summing up of the direct and indirect effects as far as they pertain to the nervous system: (1) the loss of normal and ethical sense; (2) insanity of jealousy; (3) delusional insanity with hallucinations; (4) delirium tremens; (5) epilepsy; (6) paralysis; (7) various inflammations of nervous tissue.

ALCOHOL PRODUCES EPILEPSY

Indirectly or through heredity, it produces epilepsy, imbecility and many various diseases of the nervous and mental type. This list cannot be complete without the statement that there are exceptions, at least so far as we are able to ascertain, as regards the direct influence of alcohol upon some human organisms. You will doubtless recall men who pride themselves in stating that they have never felt any detrimental effect from alcohol and where, further, the apparent evidences of evil effects of alcohol are either lacking or very few. Such instances undoubtedly exist. I am not willing to admit, however, that no harm whatever has resulted in these cases, and I certainly am forced to state that such cases are exceedingly few.

Alcohol, just like almost every other drug, differs in its influence upon various organisms. The dose which to one is almost fatal, to another may mean an inconsiderable quantity. The same can be said of arsenic, of morphine, and of various other drugs. While it is proper to state these exceptions, however, the vast majority must be considered, and not the rare exception.

It is impossible for the physician to avoid gathering during his practice many varied pictures in the large sketch book of his experience, some pleasant, some exceedingly sad. I confess that I am totally unable to find any pleasant recollections in the section pertaining to this subject.

One of the most vivid pictures is that of a little boy, ten or twelve years old, with a patient, sweet, though somewhat stupid facial expression. He was sent to my department for treatment soon after he arrived at the institution. I remember that the innocent big blue eyes of the boy turned to me as I examined him. The silent appeal was even more pathetic than the words that followed: "Doctor, will these spells leave me? Can

I ever go back to mother? She needs me, doctor, because papa, you know, he often comes home sick and sometimes he beats mother and then she cries."

Some inquiry positively ascertained the nature of that father's sickness. It was alcoholic intoxication. It was alcohol which was responsible for the cruelty to the mother, and it was alcohol in the parent which was responsible for the condition of the child. As I wrote down opposite the name of the little sufferer the name of his disease, "Epilepsy," somehow my pen was not very steady nor my eyesight good.

But while the case is very pathetic, it is not rare. There are today in this fair state of Illinois about 8,000 epileptics. More than half of them are children. Nearly 2,000 could, if they knew enough, justly point their fingers at their father or mother or both, and say: "You are responsible for my misery. You, through the alcohol which made you its slave."

And when most of these children die early, prematurely, usually in horrible convulsions, the case is a case of murder and the name of the murderer is Alcohol.

Just one more picture. There is before me a picture of a poor deformed, degenerate idiot. Eyes abnormally large, bulging out, but blind; abdomen abnormally large compared with the distorted, feeble legs; poor little head with cranium not much larger than my fist. Do you want to know the reasons and the causes? If so, let me read the genealogy. Father an imbecile, grandfather epileptic, great-grandfather an alcoholic.

In the good Book it is said that the iniquities of fathers are visited upon children even unto the third and fourth generation. Alcohol habit, though usually not the fault of the individual, constitutes the most important one. The sin and iniquity of it is indeed transmitted even unto the third and fourth generation. Not farther, because that is death of the unborn.

REVELATION

BY ALETHEA WARD

A vibrant ecstasy is all abroad,
Electrically-sentient everywhere,
Mysterious pulsations of the air—
The mighty movement of the heart of God;
His still small voices of the urgent spring
About the ledge of being where we cling.

"Put into the school that which you
would have the state."

SHOJO-HI.

BY REV. GARRET HONDELINK

Missionary to Japan of the Reformed Church in America

THE Japanese have a certain cloth called shojo-hi. It is made of wool and dyed red. It is said concerning this cloth that the genuine is dyed with the blood of Shojo found in the China sea. Now these Shojo, just like men, are able to talk very well, and because they are wise and clever, know beforehand all about the way in which men try to catch them. Consequently they are in the habit of hiding away down at the bottom of the sea. Those who have caught them say it is almost impossible to get the better of them in any way. However, men's intelligence is something wonderful, and they are well aware that the Shojo are very fond of sake (Japanese beer). These Shojo catchers know also that, if these animals have but a smell of the sake, they will be sure to come up from the bottom of the sea. Accordingly they put some sake into large jars, and with dippers beside these arrange them in rows in the meadows on the shore. Then they take the grass growing around, and, without cutting it off, tie it, and make a lot of it into the shape of shoes and leave them on the shore. These Shojo catchers hide themselves some distance away and watch for the coming of the Shojo. Thereupon, it is said, the odor of the sake seems to enter and to permeate the very bottom of the sea.

The Shojo snuff up this odor, and one will turn to his companion and say: "Sansuke Shojo! Isn't there some kind of pleasant odor here? Surely this must be sake! Come, let us go up out of the sea."

ONLY A TRAP

To this, it is said, Sansuke will reply: "No! no! We must not recklessly go up out of the sea! It is only a trap of theirs to get us to drink it so that we will get drunk, and then they will beat us to death."

Then another Shojo replies: "It is all right to go up, provided we do not drink any of the sake. It is much better to go there and to get the smell of the sake than to be here and to smell this obnoxious seaweed."

Then all the Shojo exclaim: "Why of course, that is true. There surely can't be any danger in merely smelling of it. Come, everybody come!"

So saying, they all leave the water on tip-toe, and go up to the sake jar. But this is far different from merely smelling it at the bottom of the sea. Soon all exclaim: "What

a fine odor this is! But, somehow or other, I can't endure this!"

Continuously snuffing it up, they keep loitering around the jars until finally one will say: "Why, this is only smelling it! I can't possibly stand this! Suppose we take one dipperful apiece."

But to this another Shojo replies: "No! no! We must not do so dangerous a thing! All Shojo that have been caught before this have likewise snatched up those dippers, and just swallowed the sake down. Then they got drunk, and finally were killed."

The other Shojo assent to this, and say: "That is just the case. It would be very dangerous to drink any sake with those dippers, but simply to dip in our fingers and to lick them off would be quite safe. Come, let us do so."

Then they all put in their fingers, and lick off the sake. But this, again, is a very different thing from simply smelling the sake.

The Shojo then walk round and round while smacking their lips, and soon one will say to another: "Really, simply to keep on licking sake like this is not enough for me. Though we should drink some with the dippers, if only we do not fill up on sake, we need have no fear that we shall get drunk." All respond: "That's so! That's right!"

And then they all take up the dippers, and drink a little apiece. Soon one will be heard to say: "Unless one fills up on sake, and gets real drunk there is really no use in drinking sake. Besides, it is hardly the correct thing to say that the Shojo who hitherto were killed and had their blood pressed out met such a fate simply because they were drunk. Why, just look down at your feet. They have made ever so many shoes without even cutting off the grass. The former Shojo put on such shoes, and they danced needless jigs, and then tumbled over and were caught and killed. It cannot be dangerous simply to get drunk."

Again the others reply and say: "Why surely, that's so. Though we do get drunk, if only we do not put on those shoes, we need have no fear that we shall be killed. And so let us drink until we are dead drunk."

And then, when they had drunk ever so many dipperfuls, and are very drunk, strange to say, though they do not want to, they get an irresistible desire to put on those shoes. And then they all say: "Come, why not put on those shoes? Though we do pull them on, if only we do not dance and tumble over, there is no danger. Let's simply sing a song."

They put on the shoes; they sing, beating time with their hands. and, strange to say,

get the desire to beat time with their feet also. And then one will say: "What do you say to beating time with our feet also, but being careful not to tumble over?"

All then exclaim: "That's the idea! Let's do it, but be careful not to tumble over."

They beat time with their feet; they finally tumble over, are then captured and killed, and their blood is used to dye the shojo-hi.

God keep us from taking the first step in yielding to any temptation.

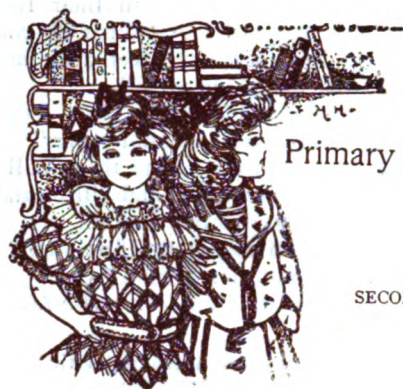
—*Christian Endeavor World.*

Knowing the dangers of dallying with temptation the wise man wrote, "Touch not; taste not; handle not."



"Death is strong, but life is stronger:
Stronger than the dark, the light;
Stronger than the wrong, the right;
Faith and Hope triumphant say
Christ will rise on Easter Day."

As an illustration of the results of a dalliance with the intoxicating cup the preceding fable lately translated from the Japanese is scarcely excelled in all literature. Children of all ages are fascinated and impressed by such stories and will enjoy reproducing this either orally, or in writing, the latter being preferable when pupils can write. In ungraded schools it may be made a part of general exercises, in others where time is limited a part of regular language work.



Primary Lessons

SECOND YEAR

THE LIFE STORY OF THE BARLEY

HOW THE BARLEY GREW

ONE spring morning, a little grain of barley stirred sleepily in its earthy bed and said, "Why, what a long sleep I have had! How warm and pleasant it feels here! I think there must be sunshine just over my head. I'll take a drink of water, and then I'll try to find the sunshine."

Soon it began to stretch itself a little, and to push aside the soft brown earth which covered it. Sure enough, there was the sunshine.

The barley sent down new roots to get food and drink, and then pushed its head up farther and farther. When it was an inch or so above the ground, it began to look about. As far as it could see, there were other little green blades all trying to get into the light.

Quite near was one a little taller than the rest who nodded in a very pleasant way and said, "Good morning, friend. Isn't this fine growing weather?"

"Yes, indeed," said the short one, "We shall be quite up in the world at this rate."

All day long for weeks and months, the sunshine warmed our little friends, the rain gave them drink, the gentle wind blew on them. They drew good food from the soil, and they grew.

First, they grew tall and put out long green leaves which looked like grass, but one day, one of them exclaimed, "I shall not grow tall any more. I am going to spend all my strength in making grain."

"It is time we all did this," said the tall one, and they set to work.

First came the green head with long, soft, green hairs on it. At the bottom of each green hair, a little kernel formed. The roots worked hard to find good, sweet food to send up to these kernels. The blades spread out

and drank in sunshine to help the plant store it up in the seed.

By and by, the barley had stored up in each grain all the food it would hold. Then the roots rested, the green blades drooped and dried up, and the whole plant grew yellow like gold.

"We are almost ripe," said the tall stalk one morning.

"Yes," said his little neighbor. "My head is so heavy I cannot hold it up straight. What will happen to us next, do you suppose?"

"I heard the farmer talking the other day as he walked through the field. He said that we would make fine food for the people in the great cities."

One day the men came into the field to gather the grain. First they cut the stalks off close to the ground. As our two friends lay side by side, the short one whispered, "I am glad we are going to be used soon."

They were bound into bundles and carried to the threshing machine. Here they were pulled apart and the husks torn off.

The little one cried out, "Oh! I am so frightened. What is happening to us?" But the tall one whispered, "Never fear. We are losing the part which is of no use. Soon we shall be made into good flour or into pearl barley and some hungry little child may have us for his breakfast."

The little one was content and said, "That will be worth while."

When they came out of the threshing machine, there was nothing left but the golden grain.

THE BARLEY THAT LIVED A USEFUL,
HAPPY LIFE

The farmer had a big crop of the barley; some of it he kept to feed to his stock; the rest was sold and sent to a large city.

Our friends, the little grain and the larger one were now separated, and the little one with many brothers and sisters was taken to a mill where great stones ground them into the form of soft, fine flour. Some of it was carried to a children's hospital where white-capped nurses made it into nice nourishing gruel for the little sick boys and girls. How pleased they were to see the nurses bringing their cups of barley gruel and what strength it gave them.

The larger one with ever so many more barley grains was taken to another part of the mill where they whirled over and over between great wheels which ground off their outer husks and left them white and shining

as pearls, indeed that was what they now began to be called, "pearl barley."

Presently a jolly grocer bought a quantity of the silvery grains and placed them in a glass-topped case from which they peeped out wondering when they would begin to be useful.

Soon a lady with her children, Frank and Elsie, came in. Their bright eyes were not long in spying out the pearl barley, and they coaxed their mother to get some. Mamma was glad they liked such good wholesome food and bought some. She made it into many a delicious barley soup, and the more they ate, the rosier and happier they grew, the harder they played at school, and the quicker they learned their lessons.

THE BARLEY WHOSE LIFE WAS SPOILED

But not all of the good barley helped make sick children well, or well ones bright and strong, for the miller did not buy all the farmer's big crop. Many more bushels were sold and carried to a gloomy building in a distant city. Something in the air made the little barleycorns afraid and one said, "Oh dear, what a dreadful place this seems. I fear we shall never be the food of happy children! What do you suppose is to become of us?"

They had not long to wait before the first of a number of unpleasant things happened to them. They were dumped into a great stone vat and soaked with water till they were much swollen; then they were placed on a big, warm floor and left till they sprouted.

"Let us keep up our courage," said one grain to another, "perhaps they are going to let us grow and make more barley."

But, alas, she had no sooner done speaking than they were rudely thrown into a kind of oven, and heated till the tiny sprouts were all dead. After this they were crushed fine between heavy rollers.

Now, the brewer, for that was the person who had bought the barley, drowned the crushed grains in barrels of water and put in bitter hops and some yeast. Then what a curious thing happened. In the yeast were many tiny living plants (so small one could

not see them without a magnifying glass) and they began at once to feed upon the sugary food of the barley. As fast as they did this, much of the barley food disappeared, and bubbles of gas and a poison called alcohol took its place. The liquid was brown and frothy. When it contained as much alcohol as one cup in 22, the brewer put the liquid into barrels and bottles and called it "beer."

It really seemed very cruel the way the little barley grains had been treated. They had pushed their way up out of the earth, the sun had given its warmth, the clouds their rain; they had worked hard for many weeks living for nothing else in the world but to

make good food for hungry boys and girls (and others, too), and now all this had been wasted, for most of the good food had been changed into alcohol, and even the tiny bits of food remaining in the beer were mixed with the alcohol poison.

In this very city where all the barley was made into beer there were many little children who could not get enough to eat. They need not have been hungry if the barley thus wasted could have been given them to eat.



"Came one. . . her torch flung light on many a careworn brow
Unheeded: but the children drew to her:
And from the throng that neither saw nor cared
One turned and stayed and caught her radiant look;
Forgot his own dim life and narrow ends;
Then went his way in nobleness renewed."

Indeed the barley was worse than wasted. It was as if some wicked fairy had changed the helpful spirit of the barley grains into a harmful spirit, alcohol.

WHAT ELSIE AND FRANK LEARNED ABOUT THE SPOILED BARLEY

This beer which the brewer had made was sent to many different places to be sold, and finally some came to the city where Frank and Elsie lived. How sorry their teacher, Miss Nelson, was for she knew many people did not understand how harmful beer is. She wanted all her boys and girls to know the truth about beer so that they would not be hurt by it. This is the story of how she did it.

One day at school she asked all the (children) what they would like to be when they grew up.

One (boy) wanted to work in a big (factory) and make the little (wheels) and other parts of (watches). The teacher told him that if he drank (beer) it might make his (hands) tremble so that he could not make so many nor such good (watches). Men who run big (factories) do not like to hire men who use drinks that have alcohol in them.

A little (girl) said, "I mean to be a (nurse) and wear a (white cap) and (apron). I will take care of (children in the hospital) and give them (barley) gruel and help them to get well so they can (run and play). "Then," said Miss Nelson, "you must eat good food like pearl (barley) and other (cereals) and be careful to grow strong and well, for it is hard work to be a (nurse). You must never drink (beer) for that often keeps (girls) from growing to be such tall, strong (women) as they should."

A (boy) named Richard, thought it would be fine to run an (engine) at the head of long trains of (cars). He would need good (eyes) and good (ears) and a good clear (head). (Beer) often dulls a man's brain so that he can not see or hear or think quickly. Then he may let the (train) go off the (track) and many (people) be hurt. So a man who uses drinks like beer is not wanted to work on the (train).

Frank said he meant to be a doctor and set broken (arms) and (legs).

Miss Nelson told him of a great doctor [Lorenz] who said that he would not drink any (wine) or drinks containing alcohol, because it might make his (head) dull or his (hands) shake so that he could not help (sick children) get well.

Elsie said she would study (books) and be a great (teacher) so she could teach little (boys) and (girls). Miss Nelson told her she must drink (milk) or (water) for if she drank (beer) or (wine) it was apt to make her feel dull and (sleepy). She could not do her (sums) or learn (map representing geography) or any other lessons so well.

One of the children said, "Isn't (beer) a good food? It is made from (barley) just as pearl barley is."

Miss Nelson told them the stories you know of the barley flour and the pearl barley and how when the barley was made into beer nearly every bit of food was gone. Worst of all, she said, the poison, alcohol, in it was likely to make one wish for more till he could hardly stop even when he found it was hurting him.

"Now," she said, "we will write on the blackboard in opposite columns the difference between barley and beer and you may copy it, pictures and all, in your note books."

WHICH IS BEST?

(BARLEY)	(BEER)
Barley is a good food.	Beer contains the poison alcohol.
Barley helps make sick people well.	Beer often makes well people sick.
Barley makes children grow.	Beer keeps children from growing.
Barley gives strength.	Beer takes away strength.
Barley helps one play, work and study well.	Beer hinders play and work and study.

Note: The above lesson may best be presented in class as a continued story in three or four parts. It may be used for oral or written language work or entire as an exercise to liven a rainy day or a Friday afternoon. The last section is intended to be used as a picture story, the words in parenthesis being represented by simple suggestive drawings or attractive pictures which may be cut from the advertising pages of magazines. (If the children are given a list of the pictures desired they will be delighted to cut them out for the teacher and she will be furnished with a variety of material from which the most appropriate can be selected and the rest used in a similar manner at some later time.)

Barley may be represented by drawings of the heads done in yellow chalk; beer by bottles drawn in brown with word "Beer"; and wines by wine glasses in white with contents in red; These are easily done and can best be shown in this way.

The story may be written on the blackboard and the pictures fastened in place with pins or thumb-tacks, or better still, put on a sheet of manilla paper, the pictures pasted on, and the story kept for language or review work.

The points regarding beer should be clearly brought out and well emphasized.

IF then, my boy, you want to be tall, if you want to be strong, if you want to be bright, if you want to grow up to do a man's work in the world, you will not smoke while you *are* a growing boy.—Selected.

School Physiology Journal

COPYRIGHT APPLIED FOR

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
 Clubs of 50 and over......40 each

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"Christ hath arisen! O mountain peaks, attest—
 Witness, resounding glen and torrent wave!
 The immortal courage in the human breast
 Sprung from that victory—tell how oft the brave
 To camp 'midst rack and cave,
 Nerved by those words, their struggling faith have borne,
 Planting the cross on high above the clouds of morn"

WHY DISCUSS THE NATURE OF ALCOHOL

ARE time and strength thrown away in discussing the question of alcohol-a-food or a-poison? Is this not a mere technicality with which the popular mind need not concern itself?

These are questions asked by some who would ignore in our school text-books and in popular discussion this subject of the nature of alcohol. What is the need, they ask, of teaching that alcohol is not a food?

The reasons can be briefly stated. First, a very large proportion of those who use alcoholic drinks, especially beer, ale, and stout, do so in the mistaken idea that these drinks are nourishing.

Second, the manufacturers of alcoholic beverages are making strenuous though subtle efforts to secure customers by representing these drinks as healthful foods. A press bureau has been organized with the avowed intention of "educating the people to a realization of the harmlessness of beer." A part of the campaign of education, according to the *Brewers' Journal* (Jan., 1907), is such advertisements as the following:

"Beer ranks with milk as a blood and strength producer."

"Physicians prescribe beer for the weak as it produces strength."

To meet such outspoken advocacy of beer as possessing the attributes of a food, with silence as to the true nature of the alcohol, not only shows a grave ignorance of present day

incentives to drink, but is to be false to the truth, and to one's responsibility for the well-being of his fellow men.

IN this connection, the recent conclusions on this question reached by Dr. H. Koettlitz of the Brussels Polyclinic, deserve more than passing notice. "His conclusions, after a non-partizan examination of the experiments and of the arguments of both sides, coming from a scholar absolutely disinterested in the question and outside of the temperance movement," says Dr. de Vaucleroy, editor of the *La Ligue Anti-Alcoolique*, "ought to be considered the logical and sincere deduction from the experiments undertaken into the nutritive value of alcohol."

Dr. Koettlitz says: "The harmful effects of alcoholism no one will contest. The most fervent partisans of the theory that alcohol is a food have been explicit on this point; Duclaux, Gautier, Starke, have all clearly shown that in their judgment it was only the moderate use, a truly very moderate use of alcohol which would be advised.

"The nullifying error of their doctrine and of the fine arguments which they build up, is that they do not settle the point in what moderation consists; one advises a bottle of Bordeaux or a liter of wine a day; he is exceeded by another who takes as criterion of moderation, the limits of individual tolerance, which is an almost certain way to fall into chronic alcoholism.

"One who 'carries' his wine well exposes himself, unknowingly, to the gravest consequences. A specialist in digestive troubles, Dr. Frantz Glenard, of Vichy, has pointed out the ravages of what he calls 'insidious alcoholism,' giving rise to nutritive disturbances, and that in persons who have never manifested any symptoms of intoxication or drunkenness.

"The only proper definition given of moderation seems to me this one; the quantity of alcohol taken at meal time in the form of fermented liquor (beer or wine), which does not exceed the proportion of one gram to one kilogram of the weight of the body,* [that is, 1-1,000 of the body's weight.]

"Does it follow that even at that dose alcohol ought to be considered a good food? I think not. I consider Weiss correct when he said: "There is not a well-observed fact which shows that it is useful to introduce alcohol into the diet. On the contrary, some

* Even this is 2-5 of an ounce of alcohol less than the minimum amount named by Prof. Atwater.

persons undoubtedly suffer for having made use of it; I do not know one who has regretted depriving himself of it.'

"I believe that this conclusion is logical from the exposition which I have made of the question as impartially as possible. Under these circumstances what becomes of the edifice of alcohol-a-food so laboriously erected? The heat producing power of alcohol, the possibility of isodynamic substitution for carbohydrates in small, much diluted doses—it is very little, as a matter of fact, and it is assuredly insufficient as an argument to oppose to the doctrine of alcohol-a-poison. The latter is solidly supported, and the maintenance of it of considerable social importance.

"This importance is considerable because the doctrine of alcohol-a-poison is, for a large number of individuals, a check in the downward path in the use of alcohol.

"The day when the doctrine that alcohol is a food in a moderate dose obtains ground on all sides—as it has already done in certain minds that one would have believed more astute—the day when this idea spreads through the masses, it will immediately exercise a most pernicious effect. It would stimulate systematic alcoholism, and the little ground gained in these last years would be rapidly lost to the great damage of the individual, of society, and of the human race."

WEAKENING THE SAFETY BRAKE

BY E. L. TRANSEAU

THE boy who does not like to take a bath may console himself, when his mother insists, by declaring that when he is a man he will never bathe.

His idea of doing as he pleases some day may be called self-government, but it is not what is called self-control.

The boy is governed by his parents, teachers or guardians because he has not yet learned enough of life to know how to govern himself wisely. But they cannot begin too early to teach him self-control. It is something a child may exercise as when he voluntarily acts in accordance with the judgment of his more experienced elders. A young man may not have acquired it by the time he is twenty-one, in which case he is likely to sow a good many of those "wild oats" that yield such an abundant harvest of after regrets.

Some never acquire self-control, but their lives usually serve the world better as warnings than as examples.

Self-control might be compared to the bicycle riders' "coaster brake." With it one can go slowly down a dangerous incline, or he can stop short.

The power of holding one's self in check, is the power of self-control.

Where does the power come from? From the nervous system. It requires a good deal of nerve force sometimes to put the brake on firmly when we wish very much to take a course which judgment condemns.

If the leg that is pressing the coaster brake should suddenly lose its power, the bicycle would carry the rider into death or danger unhindered.

If the nerves whose grip decides whether or not we act according to judgment are weakened at a critical moment, the consequences may be worse than a fall from a bicycle.

A young man usually takes pride in the strength of his muscles. He likes to be able to ride further and faster and better than his neighbor.

Is there any reason why he should not take as much or more pride in exhibiting his good judgment?

An alcoholic drink weakens nerve power. Of that there is no doubt. It has been proved experimentally and in daily life. It is proved every time a young man breaks his resolution not to drink "too much," and goes home fuddled. No matter how strong one may think his power of self-control, it is no match for the power of narcotic drugs, like alcohol, to weaken the nerves upon the strength of which the power of self-control depends.

Why are this and other countries, especially European countries, dotted with institutions for curing drunkards? Why does it pay to advertise what are claimed to be remedies for drink craving? If the toper knows that liquor is doing him injury why can he not stop it without outside help? Because alcohol has made his nerves permanently weak, too weak to apply the brake that would save him, the brake of self-control. At first his nerves would soon recover, after he had weakened them with beer or wine; in a little while it took longer; next they were continually weak. He had become a drunkard.

A manly fellow would reject with scorn the offer of something he knew would make his muscles weak just when he needed their full power. Why should he not reject with equal scorn the glass of beer or wine that will take the edge off of his nerve power and weaken his self-control, which is the safety brake of his conduct?



THE MUSCLES

SENTIMENT FOR DICTATION OR THE BLACKBOARD

IF I were to say two words to youths of this country, it would be those words which the greatest American—Theodore Roosevelt—has given to young Americans, "Be square!" The ten commandments, the golden rule, and all the good advice which your parents or your teacher may give you, in the end is nothing more or less than this one sentence. Be square with yourself, be square with your neighbor, be square with your country.

The weak boy, the lad with flabby muscles and a poor body, is not square with himself. He cannot give the world the best that is in him. He must have a strong body to do big things either with his muscles or his brains. When he squanders his strength and neglects those things which will give him strength, he is cheating, not only his employer, but himself. He is not square.

—JACOB RIIS, in *American Boy*.

As illustrative material provide a small jointed doll and some wide rubber bands (red ones are more realistic). Pictures of athletes or statues may also prove helpful.

HOW WE MOVE

The day before the lesson ask the children to see how many things and creatures in motion they can discover, and in what different ways the motion came about. (Since physiology is the study of man, the noblest thing nature has created, it is logically a part, and the most important part, of nature study and should be correlated with its various topics whenever possible.)

If time permits, let each child give a list of what he saw. What moved the cloud? the engine or other machine? the animals; birds; insects? Bring out the thought that the tiniest mouse is more wonderful than the

ponderous machine because it can move itself at will while no inanimate object can do so. Mention a creature that moves by means of two legs; four; six; eight; many. How does the bird move? the fish? What moves the legs, wings or fins of these creatures? What enables the boy to lift a weight, throw a ball, or run swiftly? Allow the children to play "Statues," that is, the children stand and imitate examples given by the teacher of various facial expressions and poses which call for the use of widely divergent muscles.

What made it possible for you to use so many different parts of the body? You can and do make hundreds of motions. How many muscles does it take to do this? (About 500). About half the weight of the body is muscle.

How many have eaten the lean meat of a chicken's leg? What was its appearance? Bring out the points that the meat was in layers or bundles and there were little tough parts (cords). Show also chart pictures of typical muscles or place them on the blackboard. Where are the muscles largest? How are they fastened on the bones?

Ask each child to grasp the left hand between the thumb and fingers of the right with the forefinger over the knuckles, and work the fingers of the left strongly. Note the movement of cords in the palm of hand as well as on the back. Is it possible to move the fingers separately? Direct them to feel the cords in the wrist and at the elbow, and observe their movements as one and another of the fingers is worked. Refer them to their books or tell them of the bracelet muscle in the wrist and tendons in the lower leg and foot similar to those already examined in the lower arm.

Uses of Muscles: Mention some things the muscles of the legs enable one to do; of the arms and hands; the muscles of the face; the tongue; the eyelids. Place the hands on the sides at the waist and breathe. What happens? What two uses have these muscles of the chest and trunk? Place the hand over the left breast near the center of the chest. What muscle can there be felt busily working away? Draw from the class and place upon the board simple statements showing that the work of the muscles is (1) to help us move in work or play, (2) to help form walls of the trunk which enclose the vital organs, (3) to carry on life processes, as the heart which pumps the blood, and those muscles which assist breathing by lifting the chest walls.

Kinds of muscles: Which of these must be told when to move? Which of them continue to move whether we tell them to move or to



"In the very May morn of his youth,
Ripe for exploits and mighty enterprises."

stop? Speak also of the muscles like those in the eyelids which sometimes move without being told when some danger threatens the eyes, but which we can partly control. Explain that muscles can get habits so that when we have told muscles to do a thing in a certain way many times they do it again almost without being told. For instance, constant practice on the piano trains the muscles so that they can execute difficult music without the performer's paying attention to the hands. Why?

How muscles do their work: We have learned of the important work the muscles have to do. Now let us see how this work is done.

To illustrate the action of the muscles, cut a piece of the rubber band a little shorter than the length of the doll's upper arm, and by means of small pieces of tape to represent the tendons attach one end to the shoulder and the other below the elbow as the biceps muscle is really attached. Similarly attach another piece to the back of one of the lower legs of the doll, fastening it just above the knee and over the heel as the big muscle there is attached. Stretch a third piece of the rubber band and show how its elasticity enables it to lengthen and shorten. Lead them to see that when it shortens it becomes thicker. By pinching up the mimic biceps and the leg muscle on the doll show how

muscles move the limbs. When this has been demonstrated ask them to grasp the upper left arm with the right hand, first with the biceps at rest, and then note how, as they clench the fist and draw the arm up, the muscle becomes much shorter and thicker. Like the rubber band it is elastic. Teach words *contract* and *relax*. Direct them to make similar observations of the triceps muscle in the back of the arm, and lead them to see that here as elsewhere the muscles generally work in pairs, one pulling the limb up and the other back.

How do the muscles know when or how to move? Refer pupils to their books for the answer to this question, and add such simple explanations as may seem necessary as to the way nerves carry messages to the muscles. A diagram of the nervous system, either in books or on chart, will be useful to show how every muscle has its own nerve to tell it when to move.

HOW TO BECOME STRONG

How many have seen great games of base or foot ball, races or other athletics. What qualities were necessary in the winners of these events? Bring out the ideas that they had to have quick judgment to seize the best opportunity to win, and great endurance, as well as splendidly developed muscles. The muscle upon which success most depended was the heart. It is a splendid thing to be able to outrun or outjump competitors or outclass them in games. It is still better to win a large and honorable success in the great field of business, scholarship or philanthropy. How did these athletes train themselves to win such honors? Show that this is an important question for all of us because we wish and need to be strong, and to be successful in any branch of the world's work requires much the same training as that which the athlete follows.

He says to his trainer, "How can I become strong?" The trainer tells him that he must have just enough carefully selected food, exercise calculated to develop strength and endurance of the special muscles and of the whole body, sufficient sleep, plenty of fresh air, and that he must abstain from improper foods and drinks.

NOTE: If the teacher or pupils can secure copies of rules for training it will add interest to the subject.

If desirable, the teacher may form the class into an athletic club calling it by the name of the town or school. A captain for the whole may be elected or the members may be equally divided and each select a leader or captain. In this connection the class may be led to adopt as a part of the regulations of the club the rules for

healthful living indicated at the end of the lesson. From time to time the divisions may be asked to report upon the way in which its members have lived up to the regulations, and a wholesome rivalry to excel in healthful practice be stimulated.

Let us consider that we, girls as well as boys, are in training for a most important race which is to begin when we are 21 years of age, or perhaps sooner. What shall be our rules? We have to take into account some things the grown athlete does not because we are getting our growth. We have the advantage of him, too, because we are beginning so early that we can avoid some of the mistakes he made, very likely, while he was growing up.

Write upon the board the main heads of the following suggested scheme for good athletic or health training leaving ample spaces between each.

Take up the first regulation and discuss fully, referring to the books and all available material. (See particularly the September JOURNAL which had several pages of helps on this line). As far as possible, draw the points to be made and reasons for the same from the pupils, and place them under the topic in proper order. In similar manner develop the other topics.

In teaching the reasons why all who wish to be strong and well should abstain from narcotics bring out the points: (1) that beer, cider, and other alcoholic drinks do not give strength. In small quantities alcohol usually decreases the amount of work a person can accomplish in a given time, and in larger quantities it has a tendency to cause fat to form in the elastic lean meat of the heart and other muscles. (2) That boys who use cigarettes or tobacco have weakened muscles, and men as well as boys who use much of this narcotic often have muscles that tremble or twitch.

To illustrate the advantages of avoiding alcoholic drinks, even beer or wine, and of using simple foods, tell the story of Daniel and his three friends (See first chapter of Daniel). Show how they purposed in their hearts not to do such a wrong thing as to defile their bodies with the wines and rich meats the king had commanded to be given them; how instead of rudely refusing thus to violate their principles, they politely and tactfully asked for a test which would prove that they would really be better for the simple fare; how they continued to thrive on the plain vegetable diet and water until the grand test before the king several years later; and how he honored them above all others because

their adhering to their principles in avoiding forbidden foods and intoxicating drinks had caused them to excel in body, mind and character.

THE HEALTH CLUB REGULATIONS

1. *Proper feeding.*

- a. Foods for building:—Grains, eggs, beans, peas, milk, lean meat.
- b. Foods for giving strength:—Starchy foods like bread, sago, and rice; butter fat meat, sugar.
- c. Foods to be used sparingly:—Rich foods, red meats, candies, sweets, and pickles.
Avoid tea and coffee.
- d. How and when to eat:—Slowly, chewing food fine; only at regular hours.

2. *Suitable exercise.*

- a. Best kinds of exercise:—Games and helping others.
Running, leaping, walking, for legs; ball playing, climbing, for arms; gymnastics and swimming for body and limbs.
- b. Where to exercise:—In open air or well ventilated room.
- c. Time and amount of exercise:—Regularly every day. Not just before or after a hearty meal nor before going to bed, nor to the point of being overtired.



"It is the mind that maketh good or ill,
That maketh wretch or happy, rich or poor."

THE NERVOUS SYSTEM AND LIFE

HIGH SCHOOL

"The youth is prodigal with his expenditure of the nervous system, and little does he estimate its value."

Let the study of brain and nerves center around the ideas: (1) the supreme importance of the nervous system as the servant of the individual; (2) the development and maintenance of its highest powers. For the teacher, "Psychic Life and Laws" by Sahler, Chapters IV and V, will be suggestive as to the importance of the nervous system to life. Pupils will find suggestive, in addition to a variety of regular text-books, Chapters XIV-XVIII of Rossiter's "Living Temple."

Every high school pupil should read the chapter on "Habit" in James' Psychology, Vol. I, especially the last eight pages.

Discuss the topics thoroughly, being careful that the class has a clear understanding of facts covered by each group. Require the preparation of a brief résumé of each group to be brought to the next recitation where one or more may be read and amended or added to by the class by way of review. Subjects under group III may be reported on by individual members of the class and all required to review them in a written exercise.

I. RELATION OF BRAIN AND NERVES TO LIFE

(Read the chapters in the Life of Helen Keller describing her condition when deprived of senses of hearing and sight, and power of speech.)

1. Man's dependence upon brain and nerves for (a) knowledge of world about him; (b) control of bodily activities; (c) growth and power of mental and moral life.

2. Service of brain in (a) memory; (b) decisions; (c) imagination.

3. Brain the seat of (a) affections; (b) will; (c) joy; (d) ambitions.

4. Comparison of man for (a) enjoyment and (b) achievement, with lower forms of life having a simpler nervous organism.

II. STRUCTURE OF BRAIN AND NERVES

1. Brain: Cerebrum; Cerebellum; Medulla Oblongata. 2. Spinal Cord. 3. Nerves: sensory; motor. 4. Nerve cells, fibres, ganglia. 5. Sympathetic nervous system. 6. Reflex centers.

III. EFFICIENCY OF THE NERVOUS SYSTEM

(Careful instruction in these facts will help students to understand how to keep well, to avoid nervous breakdowns, to substitute hygienic measures for unnecessary resort to drugs.)

1. Necessity of (Refer to I.).

2. How developed:

a. *By regular use* (formation of habit); Value of early reading exercises (process becomes automatic); of mathematics, science, manual training.

b. *By attention* to whatever matter is in hand.

c. *By accuracy*.

d. *By steadfastness* to work till completed.

e. *Difference between skilled and unskilled man*: former (1) sees quickly how work is to be done; (2) executes it quickly; and (3) in the easiest way.

3. How maintained:

a. *By proper nutrition* of cells.

b. *By proper rest*: (1) necessity of; (2) how secured; (3) superiority of sleep to mere change of work; (4) why young people need more sleep than adults; (5) means of promoting sleep if necessary (darkened room, cool applications to head or wrist, sponge baths; why not drugs?); (6) physiological value of weekly rest day; (7) the useful holiday (free from anxiety as to expense, hurrying, effort to do a great deal in a little time, effort to excel others.)

c. *By proper physical exercise*: (1) cultivates nerve control; (2) trains to economy of motion and thus of nerve power; (3) removes waste which produces mental depression or dullness. Games and sports which are useful to these ends.

d. *Cultivation of buoyancy and serenity of mind* (power of mind over body; *think health*).

4. How impaired or wasted: (a) By useless motions such as tapping with fingers or feet, rocking; (b) by slovenly habits of study, reading, working, playing; (c) by worry, anger, fear; (d) by unnecessary noises.

IV. SOME ENEMIES THE BRAIN SHOULD RECOGNIZE AND DEFEAT

1. Tobacco's power to cheat youth out of mental and physical rights: (a) By retarding growth and development of brain and nerve cells; (b) By dulling capacity to think quickly and act effectively; (c) By disturbing functions regulated by nervous system.

2. Changes in structure of brain cells caused by continued use of alcohol (See Berkeley, Johns Hopkins Hospital Bulletin, Aug., 1896.): (a) Shrinking of cell protoplasm; (b) Gradual stunting and destruction of gemmules and apical branches; (c) Formation of granular cell bodies.

3. Cell activities impaired by alcohol: (a) Impressions more slowly received (loss of time in thinking); (b) Loss of ability in action; less work accomplished; sense of fatigue blunted so that one may overwork without knowing it; (c) Effect of these conditions on business life.

4. Higher mental faculties: self-control (see p. 108), judgment, reason, earliest af-

fectured by alcohol—"Emotional life comes into free play unhampered by the guiding strings of reason." (a) Influence in forming alcohol habit; (b) Effect upon man in (1) his ideals; (2) sense of honor; (3) family and social relations; (4) business and political life.

5. Physical and mental power of the race weakened through alcoholic heredity (see article p. 100, also, "Effects of Alcohol on School Children," JOURNAL, Jan. 1906): (a) In nervous diseases; (b) In mental and physical deficiencies.

Only too frequently in alcoholic brains have we met with the shrunken protoplasm, stunted processes, and granular cell bodies... the after effects of long-continued malnutrition and irritation of the cells by the poison.—H. B. BERKLEY, Johns Hopkins University.

The first effects and the most pernicious action of alcohol are made manifest on the nervous system. Every function of brain and nerve may be affected, but the highest functions, the most delicate co-ordinations, the last acquirements go first.... The finer grades of judgment and the best powers of reflection are impaired; the capacity of observation and attention is lessened; and those necessary elements of restraint and prudence which man has learned to impose on his actions are weakened or removed.

—T. N. KELYNACK, M. D.

(Continued from page 111)

3. Sufficient sleep.

For grown people 8 hours.

For children 9 to 11 hours.

4. Plenty of fresh air.

As many hours as possible in the open air; well ventilated homes, schoolrooms, and other public buildings.

5. Abstinence from harmful drugs.

Alcoholic drinks, including wine, beer, and cider.

Tobacco, especially cigarettes.

NOTE—For references see September (1906) School Physiology Journal.

"Johnny's mother was urging him to sign the anti-narcotic pledge. "But, mamma, men have to chew tobacco if they have the toothache; papa does."

"What shall I do if my tooth aches?" asked his mother.

"Why," returned Johnny slowly, "I suppose you'd have your tooth pulled."

CAREFUL statistics at Yale and Amherst prove that during the four years in college those who do not smoke grow in height 24 per cent. more than those who smoke; and what is even more startling, grow in lung capacity 76 per cent. more.

CRIMINAL statistics show that nearly all the boys that are brought before the courts are cigaret smokers—cigaret smoking in youth has a debasing moral effect.

New and Successful

BROOKS'S READERS

Five Book Series or Eight Book Series

These new readers form a good, all-round basal series suitable for use in any school, but they will appeal to teachers particularly because of their very easy gradation. Both in thought and expression the books are so carefully graded, that each selection is but slightly more difficult than the preceding one, and there is no real gap anywhere. Although a wide variety of reading matter is provided, good literature embodying child interests has been considered of fundamental importance. Lessons of a similar nature are grouped together, and topics relating to kindred subjects recur somewhat regularly. All are designed to quicken the child's observation and increase his appreciation. Each volume contains a large number of choice illustrations.

American Book Company

New York Cincinnati Chicago Boston

THE SUFFOLK

ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

284 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

ARE YOU A Primary-Kindergarten Teacher?



Th t is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the ONLY HOUSE IN THE U. S. putting up Kindergarten material especially for Primary Schools. If you will send for free catalogue now we will send you of charge instructions for using Kindergarten material in primary schools, the regular price being 25 cts. Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.



DOES 40% SAVING INTEREST YOU

School Physiology Journal Club Offers

Every group must contain the **SCHOOL PHYSIOLOGY JOURNAL**. Magazines may be sent to different addresses. Subscriptions may be new or renewals. Many more combinations for the asking.

FAMILY GROUPS.

World's Work, †	\$3.00	} OUR PRICE \$3.25
McClure's, †	1.00	
Delineator, †	1.00	
Physiology Journal,	.60	

Review of Reviews,	\$3.00	} OUR PRICE \$3.10
Woman's Home Companion,	1.00	
Success,	1.00	
Physiology Journal,	.60	

Review of Reviews,		} OUR PRICE \$3.75
Any two of Class A,		
Any one of Class B,		
Physiology Journal,		

YOUNG FOLKS' GROUPS.

Little Chronicle,	1.50	} OUR PRICE \$2.40
Or American (Leslie's),	1.00	
American Boy,	1.00	
Our Little Folks (new),	1.00	
Or Success,	1.00	
Physiology Journal,	.60	

TEACHER'S GROUP.

Normal Instructor,	\$.75	} OUR PRICE \$1.50
Primary Plans,	1.00	
Physiology Journal,	.60	

FARM GROUPS.

Farming,	\$1.00	} OUR PRICE \$2.00
American Farmer,	.40	
Reliable Poultry Journal,	.50	
Kimball's Dairy Farmer,	.50	
Art Portfolio (6 pictures),	1.00	
Physiology Journal,	.60	

CLASS A.

Success,	1.00	} Any 1 with JOURNAL \$1.10
Woman's Home Companion,	1.00	
American (Leslie's),	1.00	} Any 2 with JOURNAL \$1.75
Our Little Folks, (new)	1.00	
American Motherhood,	1.00	} Any 3 with JOURNAL \$2.35
Primary Plans,	1.00	
Teacher's World,	1.00	
Farming (with accident policy),	1.00	

CLASS B.

American Boy,	\$1.00	} Any 1 with JOURNAL \$1.00
Everyday Housekeeping,	1.00	
Normal Instructor,	.75	} Any 2 with JOURNAL \$1.50
Designer, †	.50	

CLASS C.

C. E. World,	\$1.50	} Either with JOURNAL \$1.70
Suburban Life,	\$1.50	
Little Chronicle,	1.50	

† Single subscriptions for full price only.

This combination cannot be changed.

†Less 10 cents if this is chosen.

Anti-Cigarette Helps.

Power of the Tobacco Habit, \$.20.
Especially Harmful, \$.20.
Samples of each \$.50.

The Cigaretist, \$.05.
Cigarettes and Tobacco, \$.05.

Boy and the Cigaret, \$.05

Why the Cigaret is

Alcohol and the Nervous System, sample leaflets, \$.10.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

The Scientific Case Against Alcohol

::

By C. W. Saleeby, M.D., F. R. S.

A Cigaret Crusade

::

By Supt. A. Reist Rutt

Boston Public Lib

APR 15 1907

B.P.L.



THE SCHOOL PHYSIOLOGY JOURNAL



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVI. NO. 8
APRIL, 1907

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern deals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to contain a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid to any address on request.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

It CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.
\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

• CONTENTS •

	Page
The Scientific Case Against Alcohol	113
BY C. W. SALKBERRY, M. D., F. R. S.	
A Cigaret Crusade	115
BY A. KRIST RUTT	
Alcohol not a Heart Stimulant	116
BY GEORGE ROSENFIELD, M. D.	
Grammar Lesson—Fifth or Sixth Year—Circulation	117
Editorials	122
Mrs. Mary H. Hunt	123
BY T. D. CROTHERS, M. D.	
They Want Your Money	124
Primary Lesson—Third Year—Muscles	126
Book Notices	128

AN ATTRACTIVE OFFER

THE SCHOOL PHYSIOLOGY JOURNAL, (16th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "State Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$5.00. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET, BOSTON MASS.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVI

BOSTON, APRIL, 1907

No. 8

Our Responsibility to the Defenseless

AS patriots who love our country, its flag and all that flag stands for; as Christians who love the Lord and long for the coming of His kingdom in human hearts, I conjure you whatever else you neglect, do not neglect the temperance education of the children.

Are there any defenseless that need defending more than the children of our times? Can any need be greater than their need of the defense of knowledge against their own frequent inheritance of subjective temptation and the environment of invitation to yield to that temptation and to begin the career that ends in hopeless death? Alas, none! Therefore I share with you, who may read these lines, the solemn urgency of this responsibility for the temperance education of the childhood of this land. With you I gladly share the promise of Divine help if you will promise to do your utmost to secure for these defenseless, the warning knowledge that will be unto them a defense in the hour of temptation.

—Mrs. Mary H. Hunt.



THE SCIENTIFIC CASE AGAINST ALCOHOL

BY C. W. SALEEBY, M. D., F. R. S.

THE first teetotal doctor who raised his voice some sixty years ago was looked upon as a faddist of an exceptionally silly kind. If there was any doctrine which the medicine of those days did not question, it was the doctrine of the value of alcohol, alike in health and disease. Like other good things, it was, of course, capable of abuse—just as the sun, the source of all life, may cause sunstrokes. But to be at once a doctor and a teetotaler was to be a lunatic to boot.

Those were early days, however; the science of pharmacology which studies the action of drugs upon the healthy body, was unknown, nor had bacteriology come into existence. In course of time it happened that ethyl-alcohol, like any other substance of sufficient interest, was haled before the bar of science. It claimed to be a food, to be a stimulant, to keep out cold, to protect against infection, to aid digestion, to be at once a necessity in health and a panacea in disease—to all of which claims a critical and cold-blooded science replied, "We shall see."

A TRIAL BY SCIENTISTS

The trial has been conducted not by teetotalers, but by all manner of men. It has been conducted by a whole host of diverse methods, varying from the method of the chemist, who studied the possibilities of oxidation and thus the food value of alcohol within the body, to the actuary, whose business it was to ascertain such facts as would make for the profitable conducting of insurance companies; and the uniform result of all these diverse inquiries is to establish the

revolutionary conclusion that to be on the side of alcohol today is to proclaim oneself ignorant, or worse.

My special concern here is to call attention to the recent completion of the scientific case against alcohol.

It has been shown, and is now accepted by all competent persons, that alcohol is not a necessary article of food, that the drug which is supposed to keep out the cold has a constant, marked, and doubly-effected action in the reduction of the temperature of the body. It both increases the loss of heat from the surface of the body and interferes with the production of heat in its interior.

SEDATIVE OR STIMULANT

No critical pharmacologist can be found to regard alcohol as a stimulant any more than he regards opium as a stimulant. In both of these cases, as in many drugs, a drug which is essentially a sedative or depressant exercises a preliminary stimulation. To fix upon this stimulation, however, as the essential character of the drug, is to stultify your terminology; since you are then left with one and the same term—stimulant—to apply to a true stimulant such as caffeine or coffee, on the one hand, and a pseudo-stimulant, or depressant with preliminary stimulation, such as alcohol or opium.

But though the various sciences, including experimental psychology, whose condemnation of alcohol in relation to intellectual processes is most noteworthy, have sent to the right-about almost all the common delusions which the medical profession shared sixty

years ago, there still did appear to remain at least one extremely common and important morbid state in which the value of alcohol remained unchallenged. This morbid state is fever. In the desire to seem impartial and to avoid the appearance of the evil of bias, I have until lately insisted upon the great value of alcohol in fever. The available evidence seemed to be entirely in its favor. Physicians generally, I knew, used whiskey or brandy in the treatment of such a disease as pneumonia, and there seemed to be no adequate reason why I should hesitate to accept the opinion of practical men, even though it seemed to be incompatible with the rest of one's beliefs about alcohol. Here and there, however, practical men began to raise a doubt. They showed records of pneumonia treated without a drop of alcohol, and these records compared most favorably with those of the common practice.

And lastly, the new science of bacteriology has entered into the field and struck at alcohol what is beyond doubt a final blow. The illustrious Russian scientist, Professor Metchnikoff, of the Pasteur Institute of Paris—he who first discovered, some twenty years ago, the power of the white cells of the blood to enclose, kill, digest, and utterly destroy the microbes to which ninety-nine hundredths of all diseases are due—has induced various workers to make a critical study of the influence of alcohol upon the white cells and their microbe-destroying function.

A SWEEPING VERDICT

Dr. Metchnikoff lately lectured in London. A considerable part of his first lecture, delivered before a large medical audience of very great distinction, was devoted to a discussion of the influence of alcohol upon immunity from, and susceptibility to, disease—these being ultimately dependent upon the behavior of our white cells. One wished that the abused and flouted medical pioneers, long since dead could have heard the enthusiastic applause which greeted Dr. Metchnikoff's words.

He showed that alcohol, even in tiny doses, paralyzes the white cells of the blood. In the presence of the deleterious microbes which they would otherwise promptly and successfully attack and kill, the white cells remain passive and motionless. It is an easy matter to protect rabbits against the disease known as anthrax, but the methods which are ordinarily so efficient are found to fail completely if the rabbits meanwhile have been dosed with

alcohol. Then, when the white cells are examined under the microscope, they are found to be paralysed. A host of other microbes beside that which causes anthrax are found to be similarly advantaged by the paralysis which alcohol induces in the defending army of the body. Lastly, there is the extremely striking fact that, in almost every case, the failures to check the development of hydrophobia in persons sent to the Pasteur Institute were found to occur in alcoholic patients. The summary of Metchnikoff, loudly applauded by a large audience fully representative of the leaders of scientific medicine in this country was this: "Besides its deleterious influence on the nervous system and other important parts of our body, alcohol, therefore, has a harmful action on the white blood cells, the agents of natural defence against infective microbes."—*Brit. Med. Temp. Rev.*



RE-BIRTH

BY EVERETT H. HASTINGS

THROUGH my open window at the
dawning
Floated music of an April morning;
Spring's obligato, like a waking song
Yet dreamy with the winter's sleep, so long,
As Nature yearning once more to be free
Gave back response of wild, rich melody—
And through each note the pregnant message
ran
Of Life, indwelling—Life since Earth began!

A sparrow's song, a bluebird's note arose,
The rush of brooks, the lazy call of crows,
Woodpecker's sharp tattoo, as, unafraid,
His knock upon the door of tardy spring is
laid,
And hark, that throb, that quick and joyous
beat,
The partridge drumming in his far retreat!

Dear sounds of spring, with nameless charm
to fill
The heart with rapture, wake a prescient
thrill.

And e'en the silences are spaces rife
With all the wondrous mystery of life.
Oh happy chorus, borne by brook and bird,
The welcome music of the season's Word!
You bring to me, as spring brings unto earth,
The primal glory arching like soft skies above.
The glory of life's Giver, the greatness of
His love.

A CIGARET CRUSADE

BY A. REIST RUTT

Superintendent of Schools, Ardmore, Penn.

A NUMBER of years ago, I chanced to meet on the street of a certain borough, a ragged, dirty, unkempt lad about six years old, smoking a cigaret. Within the month, I met him again similarly employed. This incident led me to make an investigation in order to learn to what extent the boys in the schools of that town were addicted to the practice. The result of this investigation was to me a startling revelation. A crusade was begun with gratifying results.

Before describing our method of procedure, it is only fair that I should state two favorable conditions which materially aided our project. The first of these conditions is essential, if you wish results in this crusade. *At the time there were no teachers on the corps who smoked.* Example is the soul of effective instruction.

The second of these conditions is not absolutely essential, but in a town where all the "celebrities," of whatsoever class, are, known to everybody, a deterring example from the very class against whom the crusade is directed, has a beneficial effect. At the time, there had "staggered" into the high school of that town a cigaret fiend. How he ever got into the high school those who knew, never told. At best he only staggered in, and he remained long enough to serve a good purpose. He wanted to play foot-ball. He could not play, because his breath was short. He was soon ruled out by the boys, for their athletics had no faculty supervision at the time, with the statement, "He's no good; he smokes too many cigarets." Though his case was never cited by any teacher, every boy had learned from his neighbor why — was no longer on the eleven.

After my personal observation had convinced me that some effort should be made, the matter was presented to the teachers who heartily seconded the move. Each teacher quietly learned the names of the smokers in his or her charge. It was discovered that about twenty per cent. of the boys had indulged from a "whiff," as I would characterize it judged by the effects, down to the "fiend" in lowest rank. The information was secured without alarming the culprits. If I were to stir out my dusty note book, I could get those names even at this date.

After the data were secured, the evils of the cigaret habit were discussed in every school either by the teacher, or the superintendent, and in a number of instances by both. The subject was discussed calmly and the appeal was made entirely from the standpoint of the boy's ambitions and interests. The boys love to win in a race; the cigaret smoker is too short of breath to win a race except in a race with his kind. The boy delights in a steady nerve; the cigaret smoker lacks this quality. The boy takes pride in a bright eye and a vivacious manner; the cigaret smoker lacks these qualities. The strong body, the elastic step, the clear mind are not



"Hear how the birds, on ev'ry blooming spray,
With joyous music wake the dawning day."

found in the habitual smoker.

The teachers took a personal interest in the smokers. Many of them talked to the boys in private. Rolls of honor were made of those who had refrained from smoking for a week and then for a month. The cigaret smoker, who ventured on the school grounds, smoking a cigaret was always called to account. The boys soon learned that the teachers were in earnest in the matter with the result that they made serious efforts to comply with the request of their teachers. In many instances, the parents took an interest and rendered aid.

This is practically all there was to our plan of dealing with the cigaret question. There is nothing original about it, and the success that attended it is entirely due to the hearty co-operation and enthusiastic efforts of the teachers.

In conclusion I should say something about the results. We did not stamp out the evil. I could not give statistics to prove that any boys were led to abandon the habit or that any were deterred from entering upon the life of wretchedness which attends the youthful victim. Those who could give this information are not yet old enough to do so. However, more than one parent made the statement that there were fewer cigaret smokers among the boys and they credited it to that crusade. I do know that in later years in grades in which there had been a large proportion of smokers there were but few, showing that these pupils, though attending the same school, under the same teachers, living in the same environment, for some reason or other had departed from the evil ways of those who had occupied those seats a few years before.

ALCOHOL NOT A HEART STIMULANT

BY GEORGE ROSENFELD, M. D.

THE most important organ, however, is the heart and it is deplorable that physicians yet cling to the idea that alcohol is a heart stimulant. As a matter of fact we have the most complete and exhaustive investigations from which to judge of the influence of alcohol upon the heart as well as upon the pulse, the blood pressure, the innervation of the small vessels and also upon the viscosity of the blood. Concerning the pulse rate in healthy men, we have a series of investigations which show that if a subject remains in the same condition while taking the alcohol no change in the pulse takes place. Moreover, as to influencing the pulse with alcohol it is characteristic that any kind of irritation is answered by a change in the pulse rate, and this change is an increase.

According to clinical conceptions increased pulse rate in a pathological heart betrays nothing but a weakening in the performance of the individual movements, which must be compensated by an increase in the number of strokes.

Information concerning the power of the heart is obtained from the height of the blood pressure. I have myself made blood pressure investigations the invariable result of which

was that no perceptible difference could be obtained with ordinary doses and nothing over 10 per cent. with very large doses. Of course with fatal or nearly fatal amounts the blood pressure fell. Kochmann, in a recent work proves that alcohol causes no increase in blood pressure in the isolated mammalian heart, and that alcohol has no noteworthy influence of any kind upon blood pressure. Mellen has also found only very brief and slight changes of the blood pressure either in small or the large circulation.

A rarely important factor in the proportion of the circulation is the viscosity of the blood. If, with the heart power remaining the same, the blood is made more fluid, less viscous from any cause, if its internal friction is reduced, that would be of importance in promoting the circulation. But any increase in the viscosity means a serious obstruction to the work of the heart. We learn something about the influence of alcohol upon the internal friction of the blood from a research (Burton-Opitz) the result of which shows that on an average the viscosity increased about 1 per cent. when alcohol was introduced into the stomach, and about 1.3 per cent. in cases where alcohol was introduced by the duodenum. Hence, to summarize, there are certain unfavorable influences which alcohol exerts upon the circulation: it acts unfavorably or not at all upon the pulse rate, it acts very temporarily and in small measure, or not at all upon the blood pressure, it increases the internal friction of the blood. We have, therefore, in all these quite enough particulars for forming the general judgment that alcohol is an injury to the circulation.

Zentralblatt für innere Medizin (1906)

The world heard a good deal about some experiments performed a few years ago on a frog's leg which seemed to show that an alcoholic solution greatly increased the working power. It now turns out that it was water the frog wanted, and not alcohol. Recent experiments comparing the effects of an alcoholic solution with those of water or of a salt solution show that the latter increased the muscle's working power 70 per cent.; plain water increased it fifty, and the alcoholic solution only 40 per cent. That is, 10 per cent. more work could have been done if the alcohol had been left out and just plain water used. Instead of being widely heralded as were the other experiments, the account of this last experiment is reposing quietly on the shelves of the medical library.

Grammar
LessonsFIFTH AND
SIXTH YEARS

THE CIRCULATION

WHEN BOBBIE MORTON WENT A-SAILING

IF there was one study above another that perfectly fascinated Bobbie Morton, it was physiology. When his aunts and uncles insisted that he would be a great doctor, his mother would laugh and say, "I am not at all sure about that, but ever since the time when at three years of age he drank a quantity of opiate and we fought hours to save his life, he has been possessed to taste every sort of medicine he could get his eyes on, and I have had no doubt he has a marked taste for medicine."

But here was Bobbie bending over his physiology with wrinkled brows and perplexed face. Tomorrow he was to be able to tell the class all about the circulation of the blood. I suspect the teacher had wisely taken note of his absorbing interest in the study of the body, felt that he must be given extra work to do to keep him from far outstripping his class, and believed, too, that he could help his classmates.

He read all his book had to say, got out two more books which his father had bought for him when he saw how interested Bobbie was in this study, tried to follow the blood stream around the body by tracing it on one of the colored plates. But it almost seemed that the more he read his books and studied, the less he could understand the wonderful thing.

"I wish," he said slowly at last, "I wish that I could be a blood disc traveling around through the body and see where I would go and what happened."

It was a warm spring evening, and he was so drowsy that he nodded over his books, and presently the heavy little head fell gently forward on his precious physiologies.

He seemed to awake with a start, to rub his eyes and to blink at the curious sight

that met his gaze. Had his wish really come true? It almost seemed so for he found himself in the midst of countless red corpuscles which, strange as every thing appeared, he knew at once were the very blood discs he had longed to follow around the body.

At first he did not think to look at himself, but presently a little red fellow floated up to him and said, "Good morning, my friend. Aren't you a stranger in this part of the country? I see, however, that you are one of our family, and I hope you are intending to stay with us for we do have the jolliest times. My name is Disc. We are just off now in our little red boats for a long cruise around the Corporal world. Won't you give us the pleasure of your company?"

This speech seemed so long for such a little fellow that Bobbie was almost dazed for a moment, but delight surged in his soul. "Oh yes," he cried, "I believe there is nothing in this world I want so much as to see the sights of your wonderful country."

"Let us embark, then," said Disc, and suddenly Bobbie discovered that he, too, was becoming a midget so tiny that, as his friend said, fifty thousand of them would have plenty of room to frolic on the top of a pinhead. He saw, too, that he was safely stowed away in a beautiful circular boat which was hung with crimson curtains of a curious texture. Disc, noticing that he was looking at the shape of the boat and these curious curtains, said, "Aren't these lovely boats? The curtains are made of haemoglobin cloth and the shape of the boats is the same as we have used for many years. You see the channels are crowded, and the boats often get upset, so they are built in this way to save accidents."

Disc drew their boats up side by side and they pushed off into the current which was quite swift here. Bobbie glanced about and discovered that the banks seemed smooth as silk and were a glistening pearly white. What seemed curious to Bobbie was that there were impulses in the current about seventy times a minute, and he had the impression that, in some way he could not understand, the banks moved too.

But if his shape and appearance had changed, his mind had not, and he began to ask questions about everything he saw.

"This stream upon which we are sailing," said Disc, "is part of the great circulatory system of the blood that you once read about in your physiology. The fluid in the stream is called Plasma. Quite a lot of it is water, but it also contains quantities of food and



Bobbie loved to play as well as to study.

other things for the little cell people who live everywhere on the banks. They get everything they have to eat right out of the stream, and what may not seem at all proper to you, they just dump nearly all their waste back into it. Another thing, all the air they breathe (and they must have the oxygen in the air or not one of them could live, much less work without it) has to be carried to them in the red corpuscle boats like these in which we are sailing."

"But I don't understand where the stream begins and ends," said Bobbie. "Of course there must be a beginning and an ending or something, and yet—O, now I remember, my physiology said that the circulation of the blood meant its going round and round through the body and never ending. Let me see—it said that a drop of blood went the circuit while I counted twenty-two, and that all the blood in the body could travel entirely around the body in two minutes. Was that right, Disc?"

"Yes, I think that is very nearly correct," replied Disc.

"But can you explain the branchings of the circulatory system? That was what puzzled me so. I just couldn't get it straight."

"That I will gladly do," said Disc, "and as we shall sail through some of them, you will have a chance to see all about it."

"There are three main branches or divisions of the Circulatory System. We call the largest one the Systemic Branch. It opens out of one of the four Great Lakes, which altogether we call the Heart. This group

of lakes is enclosed by the strong outer wall of the Heart. Between the lakes on the east and on the west sides is a wall so thick and strong that no one ever heard of their fluids mixing. Those on each side are connected by some curious passages called valves. The two upper lakes are named Right Auricle and Left Auricle, and the lower ones, Right Ventricle and Left Ventricle. The Ventricles are larger than the others.

"The blood in this systemic Branch flows out of the Left Ventricle, and by means of several smaller branches circu-

lates even through the remotest parts of the Lands Ends which the cell people living there call Legland and Armland, and also through a very important part of the country where the capital of Corpora, called the Brain, is situated. Most of the government officials live there. According to the size of the city, more food and other necessities of life are used in the Brain than in any other part of the Corporal world."

"But I fear you will tire of hearing me explain so much," said his bright little companion.

"Oh no, please go on," said Bobbie.

"The next branch is the Pulmonary Branch, a beautiful and very important stream flowing out of the Right Auricle, and opening out of Systemic Branch. The third is the Portal Branch toward which we are now traveling quite fast. Indeed, here we are," and with a dexterous push he guided the boats into a smaller channel just above the Stomach City.

"What is the business of the cell people who live on this Portal Branch?" asked Bobbie.

"They are largely manufacturers," said Disc. "All the food and fuel used anywhere in Corpora is brought in from a foreign country by way of a big road called the Oesophagus and kept in the factories of Stomach City till the cell people there have worked a part of it up. Let us peep in. See them at work upon the food. Look, on the other side they are putting some food into the Plasma of our blood stream now."

But the current and the slight movement of the banks hurried them on and Disc explained as they came to an enormously long straggling town called Small Intestine:

"The cell people of this town really do a large part of the work of getting the food in condition for use. There are millions who live and work in the town, and then there are many expert helpers who come in from neighboring places like Pancreas and Liver. Smaller branches of the Portal Branch flow through there and rejoin our stream later. Then there is a long town called Spleen where the cell people are rather close-mouthed and never tell just what their business is, but I have heard it whispered that they break up old oxygen boats and build new ones as well as work on the haemoglobin cloth a good deal."

"But see, Disc, what a big city this is, all the people seem to live in brown houses. This is the most populous city we have seen yet, isn't it?"

"You are right, this is a big city and a very important one too. It is Liver. Many of the cell people living here are bankers. As the stream of Plasma passes through, they select from it certain kinds of food which are not needed immediately and store them away for future use. Their savings are called Glycogen."

"But not all of these cell people are bankers for here is kept a large portion of the standing army of Corpora. Many of her enemies come in through Oesophagus in the form of curious substances called drugs or in the disguise of foods or drinks. These invaders are called Poisoners. I have had it from the highest authority that among the most dangerous of these are members of a tribe called Alcoholic Beverages, so-called because although they masquerade under such names as Beer, Wine, Cider, Whiskey and the like each contains the poison alcohol."

"You would scarcely believe how treacherous the Alcohol Poisoners are. They know that if their real nature were known they would not often be allowed to enter Corpora, so sometimes they pretend (what is not true) that they are good foods like milk; at other times that they can give

strength or perhaps can help our circulation; and so by deceit they gain entrance and get into Plasma. Then, if not arrested in Liver, they have a chance to be carried all over Corpora in the blood and to do mischief everywhere, just according to their numbers. The Liver cell soldiers fight bravely to keep the alcohol from getting into the Circulation, and if any great number of the poisoners come in, many of the defenders are seriously wounded and sometimes destroyed. Moreover, hard as the soldiers try, they can not prevent some of the enemy from passing through and injuring large numbers of the cell people in the Brain, and elsewhere.

"Where they are able to make repeated invasions they cause the settling of many fatty cells who will not work among the working cells which are then so crowded that the necessary business can not be done. The Heart wall may suffer in this way and serious damage follow. Besides, the banks of the bloodstream may be very much weakened and injured by the invaders."

"I suppose," said Bobbie thoughtfully, that if these things happened, Corpora might be entirely conquered."

"Yes," said Disc, "the only sure way of preventing any or all of this trouble is to keep the Lip-Gates at the entrance to Oesophagus Road tightly closed against the Alcoholic Invaders."

Looking ahead Bobbie now saw that the channel widened out and further on seemed about to enter a large dark colored stream. "Where are we now?" he asked.

"Just floating through Hepatic Vein Chan-



harvey explaining the circulation of blood to King Charles I.

nel," said his friend. "The large dark stream is the Systemic Branch flowing upwards to Right Auricle Lake. The Portal Branch through which we have just come really goes cross country from the Systemic Branch (which flows downward to Legland) to the dark stream as it flows upward to the lakes."

Almost before they had time to think, they were in the upper part of the Right Auricle, and then an instant later they passed through the valves which make it impossible to go back into the upper lake, and floated into Right Ventricle.

Bobbie would have liked to examine this wonderful lake, but the current was forced along so swiftly that he had scarcely time to breathe. His boat and Disc's kept together, but they rolled over and over with a million others till they found themselves in what Bobbie thought must be a great park because it was such an airy place.

"This," said Disc, "is Lungland, the breathing place of all Corpora."

Now they whirled through passages narrower and narrower till their boats could hardly go abreast, and sailed to the extreme end of Lungland where they went quite slowly around the tiniest stations imaginable. These stations seemed to be made of a gauze so fine that the air blew right through them.

Bobbie sniffed, "I believe I smell violets," said he. "I dare say," said Disc. "I always love to sail through Lungland for we are often treated to such pleasant odors here. But sometimes we get an odor so dreadful that it sickens us, and it really does damage to very many of our cell people all over the land."

"What is it?" said Bobbie, full of interest.

"It comes from Tobacco which is another of the dangerous poisoners I told you about. This comes in with smoke, and discolors and really harms the inside of these beautiful stations besides damaging the oxygen for which the millions of corpuscles come here.

"But see, the sailors are loading up with oxygen now."

Bobbie watched the wonderful process so intently that he fairly held his breath. As the air blew through the walls of the cell stations the sailors deftly caught out the oxygen and put it in their boats. The haemoglobin linings seemed now to be very important for the oxygen fairly stuck to them. But this was not all, for he noticed that a gas of which he had not before taken notice (carbonic acid gas) was passing back through the cell walls of the stations to replace the oxygen, a tiny

circulation of gases, his companion told him. Then, in some inexplicable way, certain wastes which had been thrown into the Plasma were separated from it and flowed through the walls.

"These Lungland cell people are very industrious you see," said Disc. "They do the entire work of supplying oxygen for all parts of Corpora, and besides, they dispose of considerable quantities of waste, throwing it out through a large tunnel called the Trachea."

It was so delightful here that Bobbie would have been willing to stay a week, just to smell the sweet odors and watch the millions of boats load up and sail briskly away, but now the current strengthened, and away they went.

He looked about him in the channel which Disc told him was named Pulmonary Vein, and noticed that the Plasma stream looked almost like crystal and the oxygen shone through the haemoglobin curtains like a light through a crimson shade. Now they were in Left Auricle Lake, and an instant later the valve closed behind them as they were whirled through into Left Ventricle.

"Are you tired of sailing about or would you like to take another trip on the Systemic Branch?" asked Disc. "There are some kinds of business done on the Systemic Branch which, although they have been going on more or less on the shores of each Branch, you have been too busy to notice."

Bobbie's eyes sparkled. He had been afraid that he might be going to miss that part of the trip. "Oh, yes, please," he said, "it seems as if I could sail on for months, and always see new wonders of the cell workers."

"Then we will take a trip up to Handland. It is true it is not such a long journey as to Footland, but as we had taken part of that trip when we branched off to the Portal Stream, I fancy you will like this best."

At first, the Plasma stream seemed to be flowing up hill, but in an instant it was going down again, and it went slowly and more slowly as the channels grew small. Now they were passing through the Capillary tubes, Disc told him, and it was so narrow that Disc's boat had to go ahead. Bobbie thought this Indian file procession very amusing. What wonderful work was going on.

It seemed that a million of the muscle cell people who lived here had a big contract of lifting on hand. He could not tell just how they did it, but he noticed that as the stream went, oh so slowly by, each of them selected out of the Plasma some building food and

some fuel food. They also took oxygen from the corpuscle boats, and he almost jumped in astonishment to see them putting the particles of oxygen with some of the food fuel and actually starting fires which gave them power to help with the lifting. It made heat, too, for he felt the Plasma warming about him. From these fires were ashes, and carbonic acid gas, and the muscle cell people cast them back into the stream. So much of these wastes had entered the fluid, and the corpuscles had lost so much oxygen that the stream grew darker in color. But for this the cells did not care, they knew it would be properly taken care of in Lungland and they were happy in their work. The lifting contract would be finished promptly on time.

Just at this point there seemed to be a dreadful accident. There was a sudden shock, and a great mass of metal looking strangely like the blade of Bobbie's own cherished pocket knife, seemed to rend this part of Handland, and leave the flesh gaping wide as if there had been a monstrous crack opened by an earthquake.

What a rushing to the breach there was. The muscle cells ceased their work, while the fluid of the Plasma stream still full of the red discs flowed out of the opening and the first of these corpuscles were never seen again.

Bobbie gazed with alarm at the way in which the blood stream flowed through the opening. Would all the Plasma flow out and be lost? He knew that if as much as one-third of it should be wasted all the people in Corpora would soon die for lack of food, fuel and oxygen. He trembled with anxiety, but as he gazed horror-stricken, he noticed that new forces were at work. The red corpuscles in the breach and on the banks began to roll together and cling to each other, and at the same time there seemed to be some rather sticky material brought up out of the stream (fibrin, Disc afterward told him it was) that bound them together so they could keep their places. Quicker than he could have expected, they had the great gap filled with their bodies.

Now Bobbie noticed some curious little

bodies (Bacteria) which seemed to have come from somewhere outside of the breach. These he was sure must be invaders from another country, for they seemed bent on mischief. But they were not to have the chance to do harm for he noticed quite a number of peculiarly shaped white boats. "Police boats, the Leucocytes," whispered Disc with a great sigh of relief. The Leucocytes moved steadily forward upon the invaders and there were some sharp struggles. Some of them were overturned and sank helplessly, but others rushed into their places, and the little white sailors grappling hand to hand with the Bacteria overcame them, took them inside the boats and utterly destroyed them. The day was saved for this time, but Disc said that many Leucocytes would remain on guard



With listening ear we may hear the advancing steps of a young host from all nations, who will, ere many decades, celebrate the freedom of our race from alcoholic slavery.
—Mrs. Mary H. Hunt.

while other workers would eventually fill in the gap with sound material, and only a white streak would show the location of the disaster.

"Do the Leucocytes have anything else to do but fight Bacteria?" asked Bobbie. "Perhaps," was the reply, "but that is quite a task for there are many other dangerous Bacteria besides those we saw. They may cause such calamities as diphtheria, consumption, and deadly fevers. The Leucocytes never sleep unless they are drugged, and never cease fighting till they are disabled. The Alcohol Poisoners are able to put them to sleep or make them forsake their posts, and to cripple them so much that all Corpora is at the mercy

(Concluded on page 127)

School Physiology Journal

COPYRIGHT APPLIED FOR

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.\$0.50 each
Clubs of 50 and over......40 each

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"Not a truth has to art or science been given
But brows have ached for it, and souls toiled and
striven."

A PIONEER IN HYGIENIC EDUCATION

AN appreciation will be found in another column of the efforts of the founder of this JOURNAL in working out the conception of the removal of the drink evil through popular education.

In the emphasis placed upon that phase of the subject, it is often forgotten, that to her and her coadjutors is largely due the introduction of *hygienic* instruction, especially in the elementary grades. A great change has taken place in the quarter-century since the first law was enacted making the study of hygiene compulsory in the public schools.

When, a year ago, Mrs. Hunt's work was finished, she had seen twenty-seven years of labor result in the enactment of laws by this entire nation requiring hygienic instruction in the schools; she had helped establish the principle in Canada and Mexico; she had guided the development of the varied school literature on this subject, and had seen it, translated into eight different languages, carry these hygienic truths into foreign lands; she had outlined topics of study in hygiene which, by voluntary action, were a part of courses of study in nearly every state of the Union, had been published by the Prussian Minister of Education by way of suggestion to the teachers of that kingdom, and had been recommended to the school authorities and teachers of Great Britain by the Committee representing 15,000 physicians.

It was hard pioneer work that Mrs. Hunt did for systematic health education. The sandy soil of indifference and the rocky soil of prejudice both had to be tilled with infinite patience and courage. But the time will come when the introduction of hygienic

instruction in the public schools in which Mrs. Hunt had so influential a part will be counted one of the noteworthy epochs of educational and social history.

ANOTHER VIEW OF THE SALARIES QUESTION

SOME remarkable statistics as to the cost of crime in the United States have lately been published in *Harper's Weekly* showing that the annual crime bill reaches the enormous total of \$1,076,327,605.99. Conservative estimates ascribe 72 per cent. of all crime to drink, that is, a modest total of \$774,955,876.31 is spent each year in taking care of the crime caused by alcoholic drinks.

A great deal is being said nowadays of the low salaries paid teachers and the drain it would be on the public treasury to pay more. Granting that a portion of the expense for crime is paid by fines, fees and costs, not far from \$700,000,000 annually goes out to pay for alcohol crime from the same public treasury which pays teachers. In other words, could the expenditure for this particular variety of crime be stopped and the money turned to payment of adequate teachers' salaries, every one of the approximately 600,000 teachers in the United States could receive an addition of nearly \$1,200 a year to his or her present salary.

Nor is this all. It appears from these figures that every man, woman and child of our 90,000,000 people is paying directly or indirectly about \$8 annually to take care of the crime caused by alcoholic beverages. The man who is supporting a family of five can think of a number of objects for which he would like to use that \$40 every year. But even this is not all drink is costing the teacher. There must be added to it the proportionate public cost of poverty, insanity, hospitals, and institutions for the defectives or imbeciles, which we pay by direct or indirect taxation, and the amount of our private contributions to charities in which drink is a causative factor, before we get the sum total of what drink is every year taking out of the pocket of the most abstinent teacher in the United States.

Professional esprit de corps, if no other reason, ought to make every teacher determine to train up in the schools as many abstainers as possible, for that is the only way to stop this waste of resources through drink. It can be done. Ten years of determined concerted effort on this line will send out some millions of men and women who will not compel the

teachers of the nation to pay tribute from their hard-earned salary for taking care of the results of selling and using intoxicants.

Other teachers at least will reap the benefit, even if you will have found refuge from the pecuniary struggles of the profession in marriage, death, or the almshouse.

MRS. MARY H. HUNT

BY DR. T. D. CROTHERS, HARTFORD, CONN.

IN the broadest sense of the term, Mrs. Hunt was literally a discoverer, not of new facts or principles, but of the means of organization, and of the materialization of theories into practical life which had been floating round in the realms of speculation. The teaching of the dangers of alcohol in the public schools had been talked about by different persons for a number of years, but it was like other great truths that are heard in every day and generation, which continue in a nebulous state until some master mind comes along and organizes them into practical working facts of the present.

With the instinct of a seer, Mrs. Hunt saw far in advance the mountains and valleys of a new country, and realized what their discovery and possession meant, and the tremendous power which would follow teaching the millions of school children the evils of alcohol.

This instinct was coupled with another quality, rare even among the prophets of any age, namely, a clear comprehension of the means and measures necessary to attain the fulfilment of prophetic discernment. It was not only seeing the mountain-tops in the distance, but the exact roads leading to them.

The efforts to secure compulsory laws brought out clearly the masterly abilities of Mrs. Hunt, and value of wise, persistent efforts at the right time and place. The passage of these laws was a continuous diplomatic battle, not in the coarse sense of taking advantage, and of securing results by doubtful means, but in the adroit use of apparently insignificant conditions and forces, grouping them in certain ways, and impelling them to secure results not obtainable in other ways. Mrs. Hunt saw currents and eddies which were turned to promote the cause; she saw how obstacles could be avoided and how prejudices could be removed or quieted.

In the conflict over the teachings of the books to be used in the schools Mrs. Hunt exhibited another range of rare tact and judgment in meeting opposition, and in insisting on literary clearness and scientific exactness.

Her knowledge of the subject seemed remarkable in its breadth as was her capacity to popularize and make it clear to others.

Her early training and teaching of science brought with it a genuine explorer's instinct, to recognize and accumulate the facts and evidence on any disputed subject, so that she built up a collection of references and documents which enabled her to substantiate every statement, and to speak authoritatively, while with this was the ability to recognize the value of the studies and conclusions of different persons, and their relation to the main question.

Mrs. Hunt lived in one great thought; it was her dream day and night to have the children of America taught in the schools the great hygienic facts of life. She suffered from sad losses and crosses, and passed down rough roads and through dark forests without roads or blazed trees to guide, but through it all she never lost sight of the mountains, the purpose and objects of her life.

Mrs. Hunt as a master and teacher, through the Providence of God appeared at the right time and place. Like Lincoln, and hundreds of others, she was undoubtedly destined and trained and fitted for this peculiar work by forces and conditions of which we have no comprehension at present. We have been too near her to get an adequate perspective of what she accomplished and of the results which will follow. Others in the future will realize and see what to us is now obscure.

In the great race march, from the lower to the higher, other Mrs. Hunts are needed. They will be forthcoming, and other master spirits will develop and give to the race the great facts of practical science to the lengthening of life, the lessening of sorrow, and the increasing of the happiness of the race.—*From a Memorial Address, World's W. C. T. U. Convention, 1906.*

THEY WANT YOUR MONEY

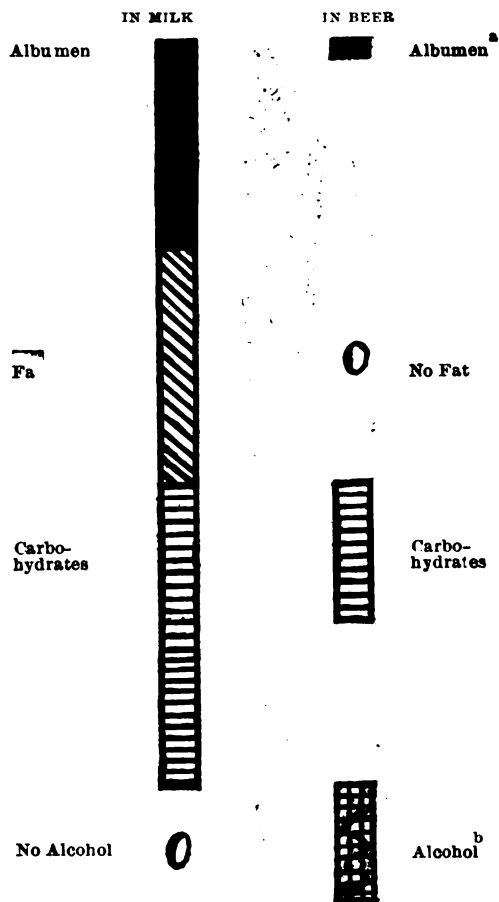
BY E. L. TRANSEAU

THE brewer wants your money, and so he tells you that beer is good for you.

But beer is not good for brewers. A German investigator finds that the death rate in the brewing industry in Germany is much higher than in other callings (1). The brewers of Munich furnish more victims of tuberculosis than any other class (2). Their vitality is so weakened by beer that they can not resist the germs of disease. They die younger than men in other business. They have more

heart trouble, liver complaints, etc. *The brewer's death rate is a bad advertisement for his wares*(3).

The brewer wants your nickels and to get them he tells you that "beer ranks with milk as a blood and strength producer." Look at the difference! The same amount of money spent for milk and for beer will buy—



^aAlbumen is an essential foodstuff; nothing else will take its place.

^bAlcohol can not be reckoned with true foods; it is an excitant, not a nourisher.*

The brewer wants your nickel, and to get it he calls beer a temperance drink. From the pen of Cicero to the latest edition of the Century Dictionary, "temperance" is defined as moderation in harmless pleasures and *abstinence* from things harmful. Beer is harmful because it is dangerous to health and

*The propositions of the above diagram are taken from a German government placard that won a first prize at St. Louis Exposition, and has had a circulation of nearly a million copies in Germany.

character, therefore it is *not* a temperance drink. Increased beer consumption has not reduced whiskey consumption in Germany(4).

To get your nickel, the beer advertiser tells you that beer is considered healthful by all scientific authorities. This is not true. "Nothing from the physician's standpoint is more false," says Professor von Bunge, "than the belief that the progressive dislodgment of other alcoholic drinks by beer will diminish the destructive influence of alcoholism."

"The first men to drop out on a march are the beer drinkers," says the army officer(5). "Beer drinkers are the most dangerous class of subjects to operate upon," says the surgeon(6). "Beer drinkers are peculiarly liable to die of pneumonia," says the practicing physician(7). "Beer makes children stupid in school," says the visiting physician of the schoolroom(8). "One-third of the patients were alcohol patients—and more than half of these were beer drinkers," says a German physician of a Munich hospital. Are these the effects of a healthful drink?

"Physicians prescribe beer for the weak, as it produces strength," says the advertisement that is shaped to catch your nickels. "It is the duty of physicians to stop the use of alcoholic drinks as appetizers (or relishes) in hospitals of all kinds"(9); "to order alcohol as a means of strengthening a patient is nonsense"(10), say many physicians. In 1862, more money was spent for alcoholic liquors than for milk in the hospitals of Great Britain. Now the figures are exactly reversed. Much is spent for milk and very little for alcoholics of any kind(11).

"Beer aids digestion," says the brewer's advertisement. "Beer slows digestion," say the figures of the experimenter and practitioner who have tested the matter(12).

"Beer is a necessary food product for civilized nations," is a claim of the brewer. The German scientist reports, "The alcohol question has become the leading social problem"(13). "A large part of Germany's land and labor goes for nothing, and worse than nothing, for flabby bodies and dull heads"(14). "To combat the alcoholism that is threatening our land we must begin with beer"(15).

"Beer contains but little alcohol," is the plea of the man who wants to sell you beer. "The small amount of alcohol in beer is fully made up by the larger amount drunk"(16).

"Beer adds cheer," urges the brewer. "Beer stupefies," says the physician(16). "It breeds contention in the home"(17).

"Beer helps you to enjoy your meals," urges the beer-maker. "Beer dulls your ability to enjoy better things," says the brain specialist (18). "It spoils your taste for enjoyments that have no bad after effects" (19). The use of a substance that deprives large classes of people of necessary food ought not to make a man's dinner taste better.

"The opponents of beer are enemies of personal liberty," cries the brewer, with his hand out for your nickel. Is the sot a free man? Has the drunkard personal liberty? They are enslaved by a drug, the most degrading kind of slavery. The brewer is urging you to buy this enslaving drug while he prates about personal liberty. The opponents of beer want you to be free, in body, soul, and pocketbook.

The beer seller wants your money; he does not care what becomes of you. His beer may destroy your money-earning power, or make you an easy victim to pneumonia; it does not disturb him. He will set his advertising traps for new dupes.

False claims sell beer—and also him whom they delude into buying it.

The beer-seller wants you to fatten his purse. The opponents of beer want you to add your share to the sum total of human happiness, and that means to increase your own to the greatest possible extent.

[REFERENCES

- | | |
|--------------------------|------------------------|
| (1) Guttstadt | (11) Horsley |
| (2) Weichrauch | (12) Chittenden, Chase |
| (3) Van Cise | (13) Stein |
| (4) Reichs-Arbeitsblatt] | (14) Ploetz |
| (5) Ray | (15) Kefenstein |
| (6) Thorn | (16) Wlassak |
| (7) Ridenour | (17) Hirschfeld |
| (8) MacNicholl | (18) Forel |
| (9) Kraepelin | (19) Behrens |
| (10) Pfaff | |

A TEMPERANCE SPELLING CONTEST

TO teachers, as well as to leaders of Loyal Temperance Legions and other juvenile temperance societies, we heartily recommend the clever new "Temperance Spelling Contest" prepared by Mrs. Helen H. Green for the Ohio Woman's Christian Temperance Union.

In a well printed pamphlet of eight pages are given full directions for conducting a profitable and exciting contest, and the rules governing the same, together with a list of over 400 words to be spelled, arranged under seventeen classifications such as "Words Descriptive of the Abstainer" (abstemious, temperate, hygienic, unpolluted), and "Mental and Moral Conditions of the Drunkard" (miserable, untrustworthy, mendacious).

The stated object of the contest is "to bring certain words before the young people's minds in particular connections and under conditions they will never forget." We believe that teachers and others using this novel contest will not only achieve the above object, but will be able to arouse new interest in the subject of temperance physiology, and in many cases interest parents and friends as well.

It would furnish a unique feature for a social held by schools or societies for pleasure or profit.

The "Spelling Contest" is published by Mrs. Annie W. Clark, President of the Ohio W. C. T. U., No. 1105, The Wyandotte, Columbus, Ohio, from whom it can be obtained in lots of 5 or more at one cent each, single copies two cents each.

NORTH CAROLINA STRENGTHENS ITS TEMPERANCE EDUCATION LAW

AS we go to press, we are informed of the recent passage by the North Carolina Legislature of amendments to the State Temperance Education law which make it one of the strongest laws of its kind in the country. We regret that the news has come too late to allow us to publish full details of the interesting history of these amendments, but we shall hope to give further space to the subject later.

APRIL'S SECRET

BY E. K. STEVENS

Nature, smiling to herself,
A secret safe is keeping;
She knows her children are not dead,
But only softly sleeping.

She knows the thrilling flood of life
Within the forest welling,
And sees the branches blushing red
With longing to be telling.
She feels the Mayflowers lift their heads
From off their mossy pillows;
And now—the *smallest tree has told*:
For here are pussy willows!

You dear, wee, furry, silvery things!
We touch you with caressing;
And pluck your sprays with eager hands
And many a whispered blessing.
A robin chirrups on the hill,
A bluebird in the hollow;
For these are pussy willow days,
And spring is sure to follow.

—Selected.



HOW TO GET STRONG, HEALTHY MUSCLES

UPON a chart or the blackboard place the best picture to be had of the "Village Blacksmith," and if desirable print or write the words of the poem. At least the first stanza, which is in a way the key-note to the lesson, should be given with the picture.

Read the poem to the children or have them read or recite it. Doubtless it is familiar to many if not all, and some may have seen a blacksmith at work. Discuss the characteristics of the blacksmith, and his environment, bringing out the fact that he really stands as a type of the strong, healthy person who can be good natured (the children looking in at the open door tell us he is so), and happy (how do we know he is happy?) because he feels well.

Not everyone wishes to develop an arm like the blacksmith's, but all wish to be strong, and general bodily health as well as strength depends quite largely on a well-developed muscular system.

Under the picture place the question in good-sized lettering—

HOW DID THE BLACKSMITH BECOME STRONG?

The answers to this question, really the topics to be studied (indicated below by italics), should be developed as far as possible by discussion and question from the poem itself, and then written directly on the chart or on the blackboard from which the whole can be transferred later to the chart if desired, and kept for review work and for use with another class.

Under each topic may be written the simple points to be remembered, and the class required to copy them in note books.

1. *By Exercise.* How many have seen a blacksmith at work? What was the appear-

ance of his arms? What made the muscles there so strong? What kind of a sledge did he use? What would happen if one of you tried to use the heavy sledge? Bring out the point that exercise must be adapted to the person.

How much of the time does the blacksmith work? What would be the result if he worked only at irregular times? Did he dawdle over his work? How do you know?

What was his purpose in working? ("He earns whate'er he can.") For whom does he work? Here are several beautiful lessons. Lead the children to see that in play as well as in work there must be some objective point to make exercise the most useful. What is the objective point of games?

How is the blacksmith useful to his neighbors? Show the dignity of all labor, whether of hand or head, which is for the good of others, and bring out the thought that since the happiness of the home depends upon the way in which it is kept, work about the home is noble as well as the finest kind of exercise.

To show how exercise is necessary to good health the story of the prince who was cured by the magic clubs (given in several physiologies) may be read or told.

2. *By good plain food.* Where did the blacksmith live? If he lived in the country what would he be likely to eat? Bring out the point that foods like fruits, vegetables, grains and simple meats such as he probably ate are the most wholesome and make the best muscles. Mention some foods that are not so likely to build up strength.

3. *By plenty of fresh air.* Where does the blacksmith work? How do you know that he had plenty of fresh air? Name some of the ways in which we can get fresh air when we play or work? Bring out the point that we need it when sleeping as well as when working. How can we get it in our rooms at night?

4. *By plenty of restful sleep.* What lines show that the blacksmith rested well at night? How had he *earned* a night's repose? How can we earn good sleep? What does it do for the muscles? How much do we need? Why does a child need more sleep than a man?

HOW TO AVOID WEAK MUSCLES

Why can not the boy who has smoked cigars for some time run so fast as the one who has not used them? Why does he seem to be tired most of the time? Explain in simple language that as the boy who smokes cigars is not likely to have so good an

appetite or digest his food so well, his body does not get plenty of nourishing food to make him strong like the blacksmith, who had a fresh ruddy face because his blood was pure. Good blood helps make good muscles. Most cigaret smokers have pale, sickly looking faces. What effect then, do you think the use of cigarets has on a boy's blood and muscles? The heart is a muscle too. Can you think of any reasons why the boy who uses cigarets gets out of breath easily when he runs and why he often has a weak heart? Lead the class to see that the poor nutrition combined with weak heart action and poisoned blood nearly always stunts the growth.

Do you think the blacksmith drank beverages containing alcohol? Why not? Was he a very fleshy man or was he lean and muscular? Show that lean muscle is stronger than that which contains much fat, and explain that any drinks containing alcohol, even the light ones like wine, beer and cider, are apt to cause fat to form in the muscles and hence to weaken them. Tell them that if there had been another blacksmith who drank liquors containing alcohol, working with this one, that the one who did not drink any would be able to do more work than the other and would not get so tired. It is a great mistake to think that such drinks make one stronger or work faster.

(Continued from page 121.)

of the deadliest Bacteria whose battle cry is 'War to the death.' This is another important reason why the Lip-Gates should be kept closed against the Alcohol Invaders."

"But we must go back to Right Auricle now," said Disc, and they were sailing slowly back, when "Wake up, Bobbie, it is bedtime," recalled our little physiology student to the land of Now and Here.

"Oh, Mamma," said Bobbie, "I have traveled all through the body, it was Corpora in my dream, and you must call me early in the morning to write out just where I went. I will read it in class. Do you suppose Miss West will let me tell the whole story?"

She did not have time for that, but she let him write on the blackboard for all the classmates to copy, the route he took. Look in your physiologies or on the chart, see if you can follow the route and tell what happened.

NOTE—For references see pages 114 and 116 and page 47 of the Nov. (1906) School Physiology Journal.

Before beginning the subject of circulation read this story to the class or divide it into convenient sections and

allow the members of the class to read it, calling each time upon the child who seems least interested to continue the story. Tell them that when the story is finished you will send one child to the chart (if there is no chart draw upon the blackboard, either free hand or by means of stencil, a plan of the circulation) or board to take the same trip Bobbie did and that as often as a mistake is made the child who corrects that mistake can go on. Or they may write in their order a list of the places visited and the child whose list is best be permitted to place it on the board. Of course the subject is to be carefully studied from the text-books. This may also be used as a supplementary reading lesson or in the language class for reproduction.

Prin. H. P., Penn., "I can testify to the great merit of the JOURNAL."

E. G., Ohio, "The teachers say they find the JOURNAL very helpful, just what they need. I am delighted with it."

Dr. T. C., Conn., "You deserve the warmest thanks for the March JOURNAL which was chaste in appearance and splendid in content."

In April the first special official course on the question of alcoholism will begin at the University of Berlin. It will include a study of its influence on moral life and upon youth, and its connection with the penal code.



"The smith a mighty man is he."

BOOK REVIEWS.

THE HUMAN MECHANISM, by Theodore Hough and William T. Sedgwick, Ginn & Co., Boston.

The keynote of the book is, "the right conduct of the physical life." Accordingly the plan differs from the usual divisions into chapters on bones, muscles, nerves, etc. One reads in the table of contents of the "Work of the Human Mechanism," "Work, Fatigue, and Restoration," "The Interdependence of Organs and of Cells," etc.

Nearly half of this book is devoted to personal, domestic, and public hygiene. This includes a chapter on "Food Accessories, drugs, alcohol and tobacco" containing some excellent material for pointing out the "right conduct of the physical life," such as the following:

"There is certainly greater danger in hypnotic drugs like alcohol than in true stimulants like coffee, cocoa or tea. . . . With hypnotic drugs to which class belong not only alcohol, but ether, chloroform, opium, chloral, etc., there is special danger that the power of control (inhibition) may be stealthily paralyzed before we know it. . . . The frequent and especially the constant use of alcoholic drinks is attended with the gravest danger to the user, no matter how strong or how self-controlled he may be. . . . The only absolutely safe attitude toward alcoholic drinks is that of total abstinence from their use as beverages."

While there is much that is good, there are some passages which it is hoped the authors will see their way to reshaping somewhat in succeeding editions.

On page 358, a clear distinction is made between a food and a drug, namely, that the materials of food are needed for normal living, and unless wrongly taken do good and not harm; while a drug "is foreign to the body," "is not needed," "and, while it may do good there is danger that it may do harm." The basis of the classification here for foods or drugs is not quantity, but the nature of the substance.

This principle the authors apply a few lines below where they say, "It [alcohol] belongs to the same general class of drugs as the ether and chloroform used for anesthesia" giving as the reason, "Its general action is that of a hypnotic or anesthetic."

So far we are on *terra firma*, but what sends us to sea is part of a quotation, "There is no substance which is always and everywhere a poison."

Is milk any less a food if one swallow half a gallon than if he take but a pint? Probably half a gallon at a sitting, if one could accomplish it, would be an injury, but that would not affect the fact that milk is classified as a food because its general action is to nourish and not to injure. Alcohol is *vice versa*. It is correct to say "milk is a food, although one may injure himself by taking too much of it." It would be correspondingly correct to say of alcohol, "It is a poison, though one may escape demonstrable injury by taking a sufficiently small quantity."

Care and precision in the classification of alcohol are necessary because its use has become rooted in social customs through ignorance and misconceptions of its nature. It can be uprooted only by knowledge of its true character. The people have a tolerably clear idea of the nature of poisons that they are dangerous substances to be handled with care. Hence they will be better prepared to realize that chief danger which the authors seek to impress if they know that the class name of alcohol is poison.

With so much that is good, that is, pointing to "right conduct in physical life," it is unfortunate that one important pointer should have been set in the opposite direction.

This book was written, we learn in the preface, as a contribution toward effecting changes in "the teaching that has been too largely anatomical and too remotely connected with the activities and problems of daily life"; but it presents a conception of a food which is purely technical, and not even remotely connected with the practical conception which holds in daily life. Oxidation and the liberation of energy is the only basis given here for the classification of foods, a basis that is not only incomplete and technical but unusable, and not even sensible when put in juxtaposition with the authors' own assertion that "in using alcohol for food, one would be obtaining heat at the cost of direct injury to many organs, and also at the cost of impaired working power."

To sum up: "*The Human Mechanism*," marks decided progress in the treatment by American scientists of the relation of alcohol to "the right conduct of physical life"; but it leaves for other pens the impossible task of showing Peter or John that black is white and white is black, or, which is all the same to him, that food is poison and poison is food; that what he buys over the bar is poisonous food and what he eats at the table is non-poisonous food. And when the doctor questions Bridget to find what has caused her

child's cirrhotic liver, and she tells him that she has been giving it "just a wee drap o' whisky t' put a bit o' stren'th in 'em," it will be no easy task to make it clear to her that whisky is food and milk is food, but that not all food acts like food, for if she gives her child whisky food she will poison it, but if she gives it milk food she will nourish it.

If science and the English language can do better than to put such incongruity into the good old Saxon word food, we must possess our souls in patience while the people perish for lack of knowledge of the new Babel. But what ought we to do, if it is only that the priests of science are slow in properly sorting, classifying and naming the truths she has uncovered?

The changes needed to bring this otherwise valuable book into scientific consistency in regard to the classification of alcohol, are not many, but they are important.

GOOD HEALTH, by Frances Gulick Jewett, Ginn & Co., Boston. In this book, which is written entirely from the health standpoint, the author has known how to get out of the beaten track, and yet say many of the things that need to be said. She is clear on the principle that "children are best instructed not by dogmatic assertion, but by giving them the facts upon which the assertions rest," but the physiological standpoint is left for higher grades. A proper amount of space is given to the subject of narcotics, and though lacking some of the direct teaching

about beer, wine and cider, that are, unfortunately, a part of the environment of so many children, it is clear and sound on the topics presented.

TOWN AND CITY, by Frances Gulick Jewett, Ginn & Co., Boston.

The later school physiologies have been giving more and more attention to pure air, pure water, pure food, and preventable diseases, but here we have the three subjects separated entirely from physiology and constituting a whole book in themselves. Much of the material used in the book comes from New York's experience in improved tenement houses, the street cleaning instituted by Col. Waring, and the food regulations of the Health Department. The expense side of alcohol is very strongly presented, also its effects upon the business and health of large numbers of people. It is a book that cannot fail to have influence in advancing appreciation of health and vigor, and intelligent care in preserving them. It will be useful as a supplement to the physiologies of corresponding grade.

We regret the inadvertent omission from the March issue, of the statement that the admirable article on Alcohol and the Nervous System by Dr. Podstata, was part of an address delivered before the Elgin, Illinois, Prohibition Club a few months ago.

New and Successful

BROOKS'S READERS

Five Book Series or Eight Book Series

These new readers form a good, all-round basal series suitable for use in any school, but they will appeal to teachers particularly because of their very easy gradation. Both in thought and expression the books are so carefully graded, that each selection is but slightly more difficult than the preceding one, and there is no real gap anywhere. Although a wide variety of reading matter is provided, good literature embodying child interests has been considered of fundamental importance. Lessons of a similar nature are grouped together, and topics relating to kindred subjects recur somewhat regularly. All are designed to quicken the child's observation and increase his appreciation. Each volume contains a large number of choice illustrations.

American Book Company

New York Cincinnati Chicago Boston

THE SUFFOLK ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

234 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

ARE YOU A Primary-Kindergarten Teacher?



Th t is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the **ONLY HOUSE IN THE U. S.** putting up Kindergarten material especially for Primary Schools. If you will send for free catalogue now we will send you of charge instructions for using Kindergarten material in primary schools, the regular price being 25 cts. Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.



DOES 40% SAVING INTEREST YOU

School Physiology Journal Club Offers

Every group must contain the **SCHOOL PHYSIOLOGY JOURNAL**. Magazines may be sent to different addresses. Subscriptions may be new or renewals. Many more combinations for the asking.

FAMILY GROUPS.

World's Work, ‡	\$3.00	OUR PRICE \$3.25
McClure's, ‡	1.00	
Delineator, ‡	1.00	
Physiology Journal,	.60	
Review of Reviews,	\$3.00	OUR PRICE \$3.10
Woman's Home Companion,	1.00	
Success,	1.00	
Physiology Journal,	.60	

Review of Reviews,		OUR PRICE \$3.75
Any two of Class A,		
Any one of Class B,		
Physiology Journal,		

YOUNG FOLKS' GROUPS.

Little Chronicle,	1.50	OUR PRICE \$2.40
Or American (Leslie's),	1.00	
American Boy,	1.00	
Our Little Folks (new),	1.00	
Or Success,	1.00	
Physiology Journal,	.60	

TEACHER'S GROUP.

Normal Instructor,	\$.75	OUR PRICE \$1.50
Primary Plans,	1.00	
Physiology Journal,	.60	

FARM GROUPS.

Farming,	\$1.00	OUR PRICE \$2.00
American Farmer,	.40	
Reliable Poultry Journal,	.50	
Kimball's Dairy Farmer,	.50	
Art Portfolio (6 pictures),	1.00	
Physiology Journal,	.60	

CLASS A.

Success,	1.00	Any 1 with JOURNAL \$1.10
Woman's Home Companion,	1.00	
American (Leslie's),	1.00	
Our Little Folks, (new)	1.00	Any 2 with JOURNAL \$1.75
American Motherhood,	1.00	
Primary Plans,	1.00	Any 3 with JOURNAL \$2.35
Teacher's World,	1.00	
Farming (with accident policy),	1.00	

CLASS B.

American Boy,	\$1.00	Any 1 with JOURNAL \$1.00
Everyday Housekeeping,	1.00	
Normal Instructor,	.75	Any 2 with JOURNAL \$1.50
Designer,†	.50	

CLASS C.

C. E. World,	\$1.50	Either with JOURNAL \$1.70
Suburban Life,	\$1.50	
Little Chronicle,	1.50	

‡ Single subscriptions for full price only.

‡ This combination cannot be changed.

† Less 10 cents if this is chosen.

Anti-Cigarette Helps.

Power of the Tobacco Habit, \$.20.
Especially Harmful, \$.02.
Samples of each \$.50.

The Cigaretist, \$.05.
Cigarettes and Tobacco, \$.05.

Boy and the Cigaret, \$.05.
The Cigaret and the Schoolboy, \$.01

Why the Cigaret is
Samples of Anti-Alcohol Leaflets, \$.10

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

592



THE SCHOOL PHYSIOLOGY JOURNAL



• CONTENTS •

	PAGE
Relation of Drink Problem to Perpetuity of the Nation,	129
Alcoholism in Germany and France,	132
That Pro-Alcohol Manifesto,	134
Save the Cigaret Boy,	135
A New Liquor Advertisement,	136
Swiss Guards of America,	136
British Statesmen Confer About Temperance Instruc- tion,	138
Science vs. Liquor,	139
Grammar Lesson—Wonders of the Bones,	140
High School—Hygiene of Individual and Home,	143

PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVI. NO. 9
MAY, 1907

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid, to any address on request.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.
\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

Every day I am more sure of the mistake made by good people universally in trying to pull fallen people up instead of keeping the yet safe ones from tumbling after them; and in always spending their pains on the worst instead of on the best material.—*Ruskin.*

THE SUFFOLK
ENGRAVING AND ELECTROTYPING CO.
Illustrators, Engravers, Electrotypers,
234 CONGRESS ST. and 275 WASHINGTON ST.
BOSTON, MASS.

AN ATTRACTIVE OFFER

THE SCHOOL PHYSIOLOGY JOURNAL, (16th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "State Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET,

BOSTON MASS.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVI

BOSTON, MAY, 1907

No. 9

In Memoriam.

OUR fathers and brothers died for our country; it is our duty to live for it. We must pay a price as they paid a price. The price which we must pay for liberty is a pure manhood and an eternal vigilance. The monument which I would place by the graves of our noble dead would be, not a cold marble statue, but an honorable, wide-awake, honest, intelligent, moral, God-fearing American citizen.

David Gregg,, D. D.



THE RELATION OF THE DRINK PROBLEM TO THE PERPETUITY OF THE NATION

BY T. ALEXANDER MACNICHOLL, M. D., NEW NEW YORK CITY

THE object of government is to conserve and protect the interests of the citizen and promote the general welfare. In recognition of this the founders of our government acknowledged "that all men...are endowed...with certain inalienable rights, that among these are life, liberty, and the pursuit of happiness." Endanger these "inalienable rights," and you endanger the life of government.

In a republic, where the citizen holds the reins of authority, there is a wealth of opportunity for the making or unmaking of government; hence it is vitally important that the citizen be equipped for the wise exercise of his regal power.

NEED OF EQUIPMENT FOR GOOD CITIZENSHIP

Of what shall this equipment consist? This is a commercial age. The value of men, offices, and opportunities is measured by the dollar mark and their intrinsic worth estimated in decimals. Money is not, nor can it be the great essential, else Babylon would still be a colossal wonder, and the throne of the Caesars might still control the destinies of the world. Money can not buy character, virtue, or national honor, neither can glutted fields and bursting treasuries forever conceal the stain of corruption.

Manhood—not money, is the essential equipment of the citizen king.

THE SOUND MIND IN THE SOUND BODY

This is a practical age. For the unfolding of manhood, gymnasiums and playgrounds compete with the punching bag and the prize ring.

Much as physical culture adds to the phy-

sical race, mere muscular development, in these days, adds little to privilege or efficiency. In the presence of the complexities and shifting intensities of modern life, muscle has been superseded by the steam engine and the electric motor.

Two thousand years ago there was one slave to every freeman in Rome, but today there are twenty steam and iron slaves to every man in the United States. The time was when muscle led the world,—today man is becoming less an engine of work himself and more a manager of the world. The trained eye, the skilled hand manipulate ponderous bodies, control titanic forces. In an age when accuracy counts, when an inch can be measured to within one five-millionth part of itself, when brain force, not brute force, rules the world, there is supreme necessity for the conservation of these elements which tend to the expansion of true manhood. Each succeeding year increases the demand for steady nerve, clear intellect and keen moral sense. The rush of invention, by stimulating ambition and giving free rein to passion, has transformed the slow course of the plodder into the killing race of the neurasthenic.

Shall men in this age maintain a healthy equilibrium? If so, there must be under the severest provocation the strictest economy of physical force. Hence, all the bodily powers need to be co-ordinated and made fruitfully interactive in the highest degree. It is the sound mind in a healthy body, the alert intellect in a frame possessing large reserve power which is needed in the republic of today.

* * * * *

DESTRUCTIVE TENDENCIES OF STRONG DRINK

Does alcohol tend to the perpetuation of the republic? The citizen is the unit. Anything tending to his undoing, to that extent tends to the undoing of the republic. What fortunes have been squandered, what homes wrecked, what lives blighted through drink! The annals of our cities are black with the records, the Potter's Field rich with the slain.

The action of alcohol upon the drinker is first that of an excitant, inflaming the imagination, discharging muscular impulses. Here we have an explanation of his readiness to laugh, to cry, to make an uproar,—later its narcotic action is evidenced by the relaxing muscle, the dilating pupil, the drowsy eyelid, and the profound unconsciousness of the "dead drunk."

These are the external manifestations. Deep seated in his organs changes are produced which in the heavy drinker may appear as disease of brain, nerves, liver, kidneys, heart or lungs, but in the moderate drinker alcohol produces deep-seated changes in the central nervous system, causes disorders of metabolism, resistance to disease is lowered, the protecting agencies of the glands and blood are neutralized, the sentinel cells in the membranes are enfeebled—without warning the system is invaded by disease and general toxemia is the result.

The damage does not end with the drinker. Were that so the race of degenerates would be self-limited and the drink problem would resolve itself into a total abstinence pledge or a drunkard's grave; but the innocent are made unwilling victims. Alcohol has inscribed death or disease upon the parental tissues, and these labeled generations are to be reproduced to minutest detail of nerve cell and fibre in the offspring.

The inherent weakness of the central nervous system is not always discoverable until some contributory or exciting cause, such as pneumonia, tuberculosis, or other infection, shock, accident, or privation suddenly flashes before us a series of pathologic conditions.

Few are conscious of the hidden dangers which may lurk within, until some spark ignites the tinder and an explosion of passion or appetite wrecks the life.

"UNTO THE THIRD AND FOURTH GENERATION"

The child of drinking ancestors starts life with the odds against him. He hears of his inalienable rights only to find that his freedom ended as soon as he was born. A legacy of inherited weaknesses conspires against him;

environment accentuates or modifies them.

In a strenuous age when every ounce of energy and every pound of reserve is needed for instant use, he fails. He vainly batters against his prison cell, but self-control, prosperity are not for him. Under the inexorable law of evolution, which maintains the survival of the most fit for service, he resigns himself to his lot,—sinks to a lower social stratum. If he escapes the suicide's grave he becomes an enemy of society, an exciter of disorder, a plunderer, a pauper.

Far from strengthening the foundations of government, far from improving the quality of the citizen, alcohol is responsible for the extension of those conditions which lessen the sum total of human possibilities and, by implanting a train of degeneracy in the offspring, undermine the nation's strength more effectually than could any foreign power. It is through the march of our internal foes that our republic is imperilled. The more strenuous the modern life, the more dangerous will these enemies become.

EFFECTS OF ALCOHOL ON AMERICAN CHILDREN

There is an alarming lack of self-control and mental efficiency evidenced by the rising generation which bodes ill.

A few days ago a boy seven years of age, when refused a simple request, in a fit of anger drew a revolver from a desk drawer, shot, and killed his mother. Within a brief period in New York City six boys, 7, 9, 10, 11, 12, and 14 years respectively, were convicted of burglary, three of them having developed a shrewd plot to rob sixty houses. Three boys, 10, 14, and 16 years respectively, were convicted of murder. These are not isolated instances.

Of the school children examined in five states, fifty-eight per cent were below standard in their studies; of these forty-two per cent were mentally deficient.

Alcohol bears an intimate relation to crime, insanity, nerve disorder, heart disease, etc. The more we increase the per capita consumption of drink the more will these troubles multiply. During the last twenty years the population of New York county has increased 60 per cent; deaths from diseases of the heart have increased 150 per cent. In ten years—1880 to 1890—the population of New York state increased 82 per cent, while insanity increased 240 per cent. During the last thirty years the population of the United States has increased 100 per cent; consumption of alcoholic beverages



"Each patriot for himself gathered up all the cherished purposes of life—its aims and ambitions, its dearest affections—and flung all, with life itself, into the scale of battle."

450 per cent; insanity 500 per cent; murder 650 per cent.

Alcohol further tends to the degeneration of the race through the production of an unhealthful and squalid environment. The children thus enveloped are stunted, half starved, poorly developed and neglected. At least 70,000 children in New York City arrive at school hungry and physically unfit for the duties involved. 92,000 in New York state, 120,000 in Pennsylvania and 1,500,000 in the rest of the United States under fifteen years of age are grinding out the balance of physical and moral capital in the factories, mines, workshops, and fields.

During the year 1905, an examination of the children in the public schools by the Health Department Inspectors revealed the fact that of those examined 63 per cent were afflicted with glandular, nervous and heart diseases; 33.3 per cent with defective vision; 36 per cent with bad nutrition and bad teeth.

Coincident with physical degeneracy there has been a serious moral decline, which by its extent has awed and by its magnitude has horrified all thinking citizens. In an investigation of the social evil, Dr. Sanger of Blackwell's Island found of 2,000 fallen women 82.5 per cent were addicted to drink; 46.5 per cent had drinking mothers; 61.5 per cent drinking fathers.

What we need above all else is men, who will not only see but live the truth.

One hopeful symptom in this dark picture of American life is the spirit of dissatisfaction with existing conditions that has af-

fected all classes and evolved those movements which aim for the elevation of all social conditions. Not least among these movements is that of Scientific Temperance Instruction in our public schools. None can fully measure the potency and efficiency of this instruction in laying the foundation for a healthy and intelligent citizenship.

We are rapidly approaching a crisis in our national history,—the psychological moment when, by the combined action of all moral and temperance forces, the tide of drink and degeneracy will be stayed and a healthier, happier, and more prosperous national life begun.

APPEAL OF EDWARD MARKHAM

Let the voice of the American conscience as it speaks through Edwin Markham, awaken us to a profound sense of duty:

"Oh masters, lords, and rulers in all lands,
Is this the handiwork you give to God,
This monstrous thing, distorted and soul-quenched?
How will you ever straighten up this shape;
Touch it again with immortality;
Give back the upward-looking and the light;
Rebuild in it the music and the dream;
Make right the immemorial infamies,
Perfidious wrongs, immedicable woes?"

"O masters, lords, and rulers in all lands,
How will the future reckon with this man?
How answer this brute question in that hour
When whirlwinds of rebellion shake the world?
How will it be with kingdoms and with kings—
With those who shaped him to the thing he is—
When this dumb terror shall reply to God,
After the silence of the centuries?"

—*American Issue.*

❦
"Heroes of old! we humbly lay
The laurel on your graves again;
Whatever men have done, men may—
The deeds you wrought are not in vain."



ALCOHOLISM IN GERMANY AND FRANCE

BY E. L. TRANSEAU

EVEN yet, we sometimes hear, from people reasonably well informed in other matters, the assertion that beer and light wines are really "temperance drinks" because they contain only a little alcohol. Even yet, also is repeated occasionally, in favor of these "light drinks," the statement of some superficial observers of fifty or more years ago, that in beer-drinking Germany and wine-drinking France one saw very little drunkenness.

It is now known that we cannot judge of the harm done by alcoholic drinks by the amount of actual intoxication to be seen upon the streets. Chronic alcoholism is a diagnosis that is now pronounced upon men who have never been "drunk" in their lives, and the prevalence of alcoholism in Germany and France at the present time demolishes the notion that beer and wine are "temperance" drinks.

Really all we need do to show the falsity of this claim for beer is to point to Germany's inebriate asylums. Thirty-two of these were reported in 1903, in a book entitled "The German Institutions for the Cure of Alcohol Patients," and it is said that in one year over 1500 men were treated for delirium tremens. So numerous are the people in Germany needing this treatment, that it has even been necessary to pass a law requiring that men who have become unable, through drink, to take care of their business or families, shall be sentenced to these drink cures for compulsory treatment.

Obviously no such statute would be needed if beer-drinking in Germany had proved to be the inoffensive practice it has been proclaimed.

Soon after the law was passed, the official reports recorded for 1895 over 12,000 persons, for 1896 and 1897 over 14,000 each year who had been sentenced to institutional treatment for alcoholism.

Two of the leading German temperance magazines for 1905 and 1906 contain the advertisements or reports of twenty different drink-cure establishments, three advertised to treat "lady alcohol patients."

A German medical society composed entirely of physicians who are directors or heads of institutions for the treatment of drunkards has recently been organized for the better study of their business. If beer-drinking truly promoted "temperance", Germany

ought to be the last country affording occupation for such specialists.

The German Reichstag was occupied in 1903 in discussing a bill to make drunkenness a penal offense. During the debate a member of the Prussian Diet said, "The love of drink, the 'drink plague' as I will call it, is literally gnawing at the marrow of our nation and conceals in itself a danger for our further development in every field of progress."

The *Contemporary Review* in 1903 thus described the condition in Germany:

"Many of the state administrative officials, as was pointed out in the Prussian Landtag, have only just managed by Herculean efforts, after having wasted the greater part of their university terms in beer-boozing, to scrape through their examinations; they never give up tippling and end their career of red-tape bungling through heart trouble, a rush of blood to the brain, paralysis, or something worse. Not a few of those who take to the Colonial service and do not leave behind them the love they acquired for beer at home, terminate their careers sooner.

"Count Douglas told the Prussian Diet that alcohol was, to a large extent, the cause of the length of the police list and of the crowding of the hospital wards in Germany...

"The increase of the consumption of beer in South Germany, and especially in Bavaria, has caused the death rate from heart, kidney and liver diseases to rise very considerably. The number of persons who died of heart trouble in Bavaria—the so-called beer-drinker's heart—has doubled within the space of ten years.....

"The Minister of Education said in the discussion in the Prussian Diet, March 18, 1903, 'It can not be denied that if the hand of reform be not soon brought to bear on this canker that is consuming the marrow of the German nation, we shall be confronted with conditions that will, in sooth, be lamentable. I have, of late, had an opportunity of speaking on the subject with doctors who are specialists in insanity. I have been assured that the increase of the percentage of these persons who have become insane from the immoderate consumption of alcohol has become quite terrifying in recent years'."

Germany's drink problem has assumed such importance that it has been made the subject of a report by U. S. Consul Muench

at Plauen, Germany, who wrote to his home government in 1904:

"A general movement for the suppression of over-indulgence in alcoholic drink in Germany, as well as in adjoining Austria and Switzerland, has been among the recognized symptoms of social reform in these countries during the last several years. Public conventions have been held....; the matter has been broadly discussed in the German Parliament; and lastly, a practical direction is to be given to all this theorizing by earnest efforts toward the production of palatable non-alcoholic drinks for the masses."

Another U. S. Consul, Frank H. Mason, of Berlin, reports also, 1904, "the spread of temperance reform principles among the middle classes", and says, "There are, moreover, several large factories and machine shops where the afternoon 'beer pause' has been abandoned, and where, if any drink is served, tea or coffee has been substituted."

Wine-drinking France has a still more alarming condition of alcoholism, and this too has been made a matter of official correspondence by U. S. Consul Atwell, at Roubaix, who wrote in 1904:

"The necessity of checking the growth of alcoholism in France is deeply felt in the Republic, and a congress was held in Paris, in October, to deliberate upon means to eradicate this evil.

"Eminent men of letters and the clergy of different denominations united their efforts in this congress to work for the common interest of the nation.

"The feeling with regard to the peril of France was voiced by Dr. Debove, dean of the medical faculty, in his opening remarks before the National Anti-Alcoholic League at a meeting held in Paris during the latter part of October. He spoke as follows:

"I gladly accept the honor of presiding over your meeting. In the face of the peril which menaces us no one has a right to refuse his support, for we have the disgrace of ranking first among alcoholic nations.

"Official statistics bear witness to the unfortunate truth of this statement.

"During the past ten

years the consumption of alcohol in France has increased in alarming proportions, while England and the United States have progressed toward temperance.

"The general abstemiousness of the people is now regarded as one of the principal causes of the increasing commercial supremacy of the United States."

There is therefore no foundation whatever for the industriously circulated notion that if the American people would drink beer as the Germans do, or wine as the French, we would reduce our losses from alcoholism. This is a fallacy which every lover of truth should help to correct.

Knowledge is the key to the drink problem. To know the truth and to use it in refuting mischievous errors and fallacies is the most effective way of working not only to preserve our present degree of "abstemiousness", but to sweep away the vast amount of alcoholic poisoning that still clogs our progress.

SOULS AND SUNBEAMS

BY ALETHEA WARD

The happy souls that cheer us all
Are like the dancing rainbow gleams
A mirror throws upon the wall,
When lighted by the bright sunbeams.
Then let us stand where God's smiles fall
Till each a sunlit prism seems.

"That there should one man die ignorant who had capacity for knowledge, this I call a tragedy."



"And oh! if there be an Elysium on earth,
It is this, it is this."

THAT BRITISH PRO-ALCOHOL MANIFESTO

THE American daily press has been rather widely heralding of late a manifesto favoring the moderate use of alcoholic beverages which was published in the *London Lancet*, bearing the signatures of sixteen British physicians, one of whom has already withdrawn his name.

The manifesto appears to have had the usual effect in such cases of promoting, on the whole, the temperance cause, as it has called out strong counter testimony from physicians, and protests ranging from that of Sir James Barr, Chairman of the Medical Faculty of Liverpool University, who thinks "this pernicious manifesto savors strongly of impertinence in presuming to dictate to the medical profession as to the value of alcohol," and demands that the signatories of the manifesto produce their evidence "if they have a scintilla of it to support their statements,"—to the comment of the *Daily News* which says that "to plead the cause of alcoholic indulgence to a nation which spends £160,000,000 a year on drink, and which owes the bulk of its vice, misery and crime to alcohol, is a sort of inverted fanaticism that seems to need explanation."

The *Alliance News* calls attention to the significant fact that of the sixteen signers of this pro-alcohol manifesto, ten qualified as physicians from 49 to 39 years ago, three of them from 37 to 32 years ago, one 24 years ago, and only two of them qualified within the past twelve years. As a medical correspondent of the *Alliance News* points out, "they therefore represented, in the main, the opinions of the old school of medicine, opinions now of little value in the face of the recent scientific conclusions regarding the true nature and action of alcohol."

Dr. C. W. Saleeby, F. R. S., of Edinburgh, in some lately published articles said:

"The recent *Lancet* manifesto derives its real interest from the number and weight of the authoritative names which do not sign it. There is not a single student of insanity; there is not a single pathologist or student of diseased tissues; and there is not one of the men who have made our modern knowledge of alcohol, to be found amongst the signatories of that manifesto. The statement that alcohol is beneficial in health either means nothing at all, or else that one is worse for going without alcohol. That has been conclusively proved to be false by hundreds of

thousands of persons at all times and in all ages, by all the followers of Buddha and Mohammed, not to mention abstainers at home. In other words, the facts of human experience are in absolute accord, as we should expect, with the latest findings of laboratory science."

The British Medical Temperance Association, which has a large membership of physicians, many of whom are special students of the alcohol question, has issued a counter declaration which we quote in full below.

COUNTER DECLARATION AGAINST ALCOHOL

The manifesto respecting alcohol which has appeared in the *Lancet* above the names of several distinguished medical men has excited more interest than perhaps it was worth. It is commendably short, and contains three propositions:

1. That alcohol is sometimes valuable as a drug. This is a matter much discussed in medical circles, and is not to be settled by *ipse dixit*, however eminent. A similar declaration would have been made seventy or eighty years ago in favor of blood-letting, now almost abandoned. To say that alcohol can sometimes be life-preserving is not to say that it is necessary, since other drugs or measures may be even more effectual, or as effectual, without the drawbacks of alcohol.

In large hospitals the amount used has been diminished from 20 to 70 per cent. during the last twenty or thirty years, and finality has not been reached on this subject. The experience of the London Temperance Hospital in which alcohol has only been given seventy-five times in thirty-three years, and in most cases without saving the life, is conclusive that its value is, to say the least, negligible, for the death rate has been lower than in most general hospitals.

2. The second statement is to the effect that the universal belief that the moderate use of alcohol is beneficial for adults is, in their opinion, amply justified. Note—the grounds of their opinion are not given. If the "universal belief" is to be taken as the proof required, then (1) the belief is by no means universal; millions believe the contrary; (2) this belief would demonstrate the benefit of much more than the doctors would admit to be "moderate;" (3) belief of benefit received would justify opium smoking and many other injurious customs.

On the other hand, it has been demonstrated by the experience of several life assur-

ance societies and by friendly societies that abstainers live longer on the average, have less sickness, and quicker recovery than non-abstainers. Whenever numbers of men can be compared, abstainers can do more work, with greater endurance of heat, cold, and hardships, and with less inconvenience than drinkers of alcohol. These are facts which the opinions of any number of doctors can not overcome.

3. The third proposition is that any beneficial thing may be injurious in excess. This is true. But the admitted injury of alcoholic excess does not necessarily prove the innocence of a small amount. One of the greatest dangers of alcohol is that people may take a daily amount of alcohol which is doing them harm, and shortening their lives, without their noticing the injury, and while they think it is doing them good, and there is always the certainty that an unknown percentage of cases will become drunkards.

An International Medical Manifesto on Alcohol was issued in 1903, signed by many eminent English, American and European professors, and in all by 664 doctors, at the instance of the British Medical Temperance Association. This stated (1) that experiments have demonstrated that small quantities of alcohol are injurious, and that it is not a food; (2) that it increases liability to disease and shortens life; (3) that abstainers do more work, etc.; (4) that all the bodily functions of a man are best performed without alcohol, any contrary opinion being a delusion; (5) that alcohol injures the offspring, and leads to the deterioration of the race, especially when taken by mothers. They, therefore, urged universal total abstinence, and said, "We believe that such an era of health, happiness, and prosperity would be inaugurated thereby, that many of the social problems of the present age would be solved."

Nothing has been discovered to contradict their conclusions.

(Signed) J. J. RIDGE, M. D.,
Hon. Sec., Brit. Med. Temp. Assn.

April 6th, 1907.

A well-known New York physician recently overheard some merry conversation between his little son and one of the maids. The seven year old was stoutly affirming that he would "not marry for 'pretty' but for love."

"You don't know what love means," she teased.

"Yes I do," he gravely retorted. "It's a hygienic experience."

SAVE THE CIGARET BOY

BY WILLIAM ARCH MCKEEVER,

Professor of Philosophy, Kansas Agricultural College, Manhattan,
Kansas

I HAVE been studying cigaret boys for the past six years, not as a philanthropist, but because it is a subject for interesting study. The cigaret boy is an interesting specimen.

Two years ago, I sent out 200 letters on the subject to various superintendents of schools, and received 100 replies to the questions I asked. They reported, the 100 of them, 3,256 cigaret-smoking boys under their supervision. In one school, 100 such boys were found by the superintendent.

At our college, I have found an average of 100 cigaret smokers per term. These are boys between the ages of 15 and 20 years. I have made these boys my confidants for the purpose of studying their cases and seeking a solution of the cigaret problem.

Who are the cigaret boys? Last year I picked out 50 cigaret boys from the college, and compared them with 50 boys of equal standing who did not smoke. At the end of the term I took the two lists to the records. The non-smokers made an average of 80 per cent against the 62 ½ per cent of the smokers. The cigaret boys made 81 per cent of the failures. I also made inquiries concerning the physical condition of the smokers. I found that over 90 per cent of them had a decided tendency toward throat trouble, 28 percent of them being troubled with distinct ulcerations of the throat. The scrawny, thin ones made up 72 per cent. "Short wind" was the verdict against all the "inhalers". Heart failure threatened 24 per cent of them.

I have found that the college boys who smoke cigarets begin at the average age of 14. The boy who begins at 6 or 8 seldom reaches college.

It is quite customary among school teachers to be harsh with the cigaret smokers, and to give them to understand that they are black sheep as soon as their failing becomes known. This is not the right way to handle the situation. Do not give the boy the impression that he is absolutely worthless because he smokes cigarets. He may believe this, and then he will become so.

The best way to cope with the cigaret problem is to find the divine side of the smoker, and work upon it, helping him to become master of himself. Give him something wholesome to think about continually.

—From an address delivered before the Kans. Teachers association, Dec. 28, 1906.

A NEW LIQUOR ADVERTISEMENT

THIS time it is a book of over 300 pages, entitled, "Alcohol: the Sanction for its Use," translated from the German of one J. Starke, who puts a Dr. before his name and nothing after it.

The contents of the book are unsupported denials of current scientific teaching concerning alcoholic beverages, and unfounded claims in their favor.

The method is assertion and argument without proof. There is, to be sure, a "bibliography" at the end, but it is purely ornamental, containing a list of names not referred to in the text, and numbered references in support of statements that need no support. They furnish no evidence for the writer's bold claims.

One of the arguments the book puts forth is that the more coffee one drinks the more alcohol he should use to offset it, that coffee contracts the blood vessels of the skin and forces the blood inward; but that alcohol widens the surface arteries and lets the blood outward and relieves the inner organs.

This argument does not hold, because too many reliable observers, such as Beaumont and others, have seen "widened" condition of arteries or capillaries in the stomach and other internal organs caused by alcohol. As a German reviewer of the German edition of the book said, "As a rule, the warm feeling in the stomach after alcohol is taken is caused by the expansion of the blood vessels. In the liver also alcohol causes arterial expansion."

Another of the untenable assertions of the book is that alcohol does not of itself possess the property of leading to an increased use, and the proof (?) offered is, the author's own experience and his claim that abstainers, as a rule, have been at least moderate drinkers. (Shades of Neal Dow and America's millions of lifelong abstainers!)

Another remarkable assertion is that the moderate use of alcohol has nothing whatever to do with drunkenness. Both the craving for drink and drunkenness, according to Dr. Starke, are due to the weakness of the drinker, and not to the nature of the drink. Dr. Forel, one of the most renowned alienists of the world, replies to this view, that if it is true, he does not know a sound person when he sees one in spite of his many years of experience, for he has known numberless cases of alcoholic ruin when the victims were neither unsound originally nor driven to drink by misfortune.

There are few persons who could not

point to instances of those who, to all appearances at least, sound and prosperous, have been led from moderate drinking to ruin by alcohol, and there is the additional fact that the evil effects of moderate drinking have often been traced in the children of the drinker where no pronounced effects were apparent in the drinker himself. (Seep.130.)

The majority of Americans are too intelligent to believe the assertion that "the moderate use of alcohol has nothing to do with the development of any disease," in view of the existing evidence to the contrary.

The other assertions in the book in favor of moderate drinking are as absurd, or as easily disproved as those quoted, but the advertisements and press notices that will undoubtedly be published by the liquor interests will necessitate a lively dissemination of the truths already at hand which will correct its false claims.

THE SWISS GUARDS OF AMERICA

THE lessons of patriotic days are usually obvious, and in a nation made up of such heterogeneous elements as ours, it is a wise provision that most of the holidays, instead of representing the mere abstract principle of a holiday, have a patriotic origin, thus affording an opportunity to teach under favorable circumstances, the fundamental ideas of what American patriotism should stand for.

Decoration Day properly has commemorated the heroism and faithfulness of those who made the supreme sacrifice for love of country. It is right that it should be so. But in the patriotic lessons that cluster about this day of tender memories, there is one which should not be overlooked which has a very direct bearing on present day problems and conditions which our coming patriots must meet.

In the city of Lucerne, Thorwaldsen has sculptured in imperishable granite a symbolic monument "To the faithfulness and the valor of the Swiss." We remember the incident which it commemorates,—the unflinching devotion and self-sacrifice of the Swiss guards in the face of the furious mob assailing the palace at Versailles. But the strength of the whole story lies in this—*They were but mercenaries.* They did not fall in defence of their native land, but in the simple performance of the duty of protecting the king and queen for which they were paid "a sixpence a day."

There is nothing in American national life

which causes the patriotic citizen a greater sense of shame and of foreboding than the revelation, in some quarters, of corruption on the part of those to whom has been committed the execution of the laws, to whom has been entrusted the safety and welfare of the kings and queens of the republic, the common people. What can be said of the policeman or of the police inspector or other official who betrays the public safety and well-being for the sake of annually filling his private purse with an amount of money several times larger than his stated public salary?

His is not the "faithfulness and valor" of the Swiss gaurds. This, then, is preeminently a present day lesson in patriotism. It is nothing but common honesty? So be it then. But true patriotism demands and includes all the noblest qualities of man. The boy who is training to understand that only that citizen is truly patriotic who does the duty for which he is paid, honestly and honorably and even by self-sacrifice, will not fail if his country calls him to the field in her defense.

SUCCESSFUL CO-OPERATION IN NORTH CAROLINA

THE last legislature of North Carolina, as already noted, amended the state temperance education law making it one of the best in the country.

North Carolina enacted a good law in 1891, but some years later lost its enforcing features. About a year ago, Dr. E. O. Taylor, well known as a scientific temperance lecturer, brought the matter to the attention of the church and temperance forces of the state with the result that a conference was held in June at which the decision was reached that an effort should be made to secure such amendments to the law as would make it more effective, and a State Central Committee was organized for this purpose.

Among those influential in the movement were Rev. Eli Reecè, Rev. E. L. Siler, Miss Elizabeth March, President of the State Woman's Christian Temperance Union, and Hon. Heriot Clarkson, Vice-President of the State Anti-Saloon league and Mr. John Q. Adams of Charlotte.

At the request of the Committee, a bill for a law embodying necessary amendments was drafted by Dr. E. O. Taylor. It was indorsed by the State Anti-Saloon League and by the State Superintendent of Public Instruction.

Much credit is due Rev. Eli Reece, Chairman of the Committee, and Mrs. I. C. Blair of the Raleigh W. C. T. U., for their generalship in securing the passage of the bill which was enacted without change. The hearty co-operation of all Christian and temperance forces in this matter is as it should be, and augurs well for the future of temperance education in that state.

How early shall we teach? The age will vary, but be sure to let purity have the first word. The child will ask questions early; let not the coarse reply get in its work before the chaste one comes.—*Frances E. Willard.*

"Teacher—For what else was Julius Caesar noted?

Tommy (who has studied the lesson somewhat hastily)—His great strength, ma'am. He threw a bridge across the Rhine."



"Ready to fall but not to yield. . . . They left their memories to sustain a nobler strife."

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation.

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"Life may be given in many ways,
And loyalty to truth be sealed
As bravely in the closet as the field
So bountiful is Fate."

BRITISH STATESMEN CONFER ABOUT TEMPERANCE INSTRUCTION

ONE of the events of far-reaching significance connected with the recent meetings of Colonial Premiers in England was a conference on "The Teaching of Hygiene and Temperance in the Universities and schools of the British Empire" which was attended by a large number of educational and medical experts of Great Britain, from the Colonies and foreign countries.

Among the many earnest speakers were Mr. Deakin, the Premier of New Zealand, Sir Philip P. Jones, M. D., of Australia, Canon MacMurray, of New Zealand, Mr. Alfred Mosely, originator of the Mosely Commissions, Sir Thomas Fuller of Cape Colony, Sir Lauder Brunton and Sir Victor Horsley.

Lord Strathcona, widely known as one of the empire builders of Canada, presided at the opening session and after stating the object of the meeting, bore witness to the great good which had followed the teaching of hygiene and temperance in the province of Ontario. He declared his conviction that the subject of informing each child "what was best for himself, his body and his life, was one of those matters which ought to have their best support;" that a child thus advised "would grow up in the belief inculcated and would do his best not only as regards himself but also in the interest of others."

The following resolution moved by John Cockburn of Australia was unanimously adopted:

"That this conference has heard with great satisfaction that instruction in hygiene and temperance is systematically given in the elementary schools of the colonies of the empire and that there is strong evidence of the value of this teaching. This conference urges upon all local authorities the necessity of providing that the teaching of hygiene and temperance shall form an essential part of the whole curriculum of education of all children."

THIS London meeting is striking evidence that the scientific temperance instruction movement has passed far beyond the stage of experiment or of dismissal by ridicule. The principle which it represents is founded on reason and common-sense and, therefore, appeals to those instincts of self-preservation and of altruism which are the safeguards of the individual and of society. That is why, as a correspondent of the JOURNAL recently wrote from a distant state of our own country, "The people are entranced by the scientific temperance instruction message."

The philosophy of temperance education is simple, viz., that what we would have appear in the man or in the nation, we must early implant in the mind of the child. There is, perhaps, no force on earth mightier than knowledge thus implanted used in developing within the child intelligent self-control and self-direction. Hence it becomes vitally important, as said by Mr. James Hughes, Chief Inspector of Schools, Toronto, in a paper read at the late British Conference, that, "Every child should be taught the nature of those things that might rob him of his power."

THE results already evident from our American hygienic and temperance instruction are an earnest of what can and will be done when the teachers understand the subject better, and when the normal schools and school boards give the teachers the training and the opportunity which thousands of them really desire.

Yet, if the teachers as a whole had not done their work well for these twenty or more years, we should not now see the practical application of scientific temperance truths to daily life which greet one at almost every turn. Business, it is said, is doing much for temperance in demanding so generally total abstinence on the part of employees. Organized athletics show an increasing appreciation of the necessity for total abstinence. The Boston Athletic Association this year positively forbade contestants in the Marithon race to use alcohol before, during or immediately after the race.

ALL this is encouraging, and shows that we are reaching that hopeful period in the temperance reform which must come before any reform is worked out to a successful issue, when forces other than those which began the work take it up and help press it to a successful conclusion. But the total abstinence platform on which business of many kinds and athletics are taking their stand is built up on the strong foundation of the scientific reasons for total abstinence laid by the teachings of the public schools, which were the first agency to teach the people at all universally the truth about the nature and effects of alcoholic drinks.

The instruction is cumulative in its effects. We see that already in its reflex influences in the home, in business and even in the ballot-box. So far, its results necessarily have been largely indirect because of the comparatively short time during which it has been in the schools.

But one of these days when the boys and girls who have been taught these truths throughout their school life become participants in the active life of the world, there cannot fail to be wholesome, intelligent total abstinence sentiment that will unmistakably decree that alcohol shall cease to lay its imposts of misery, sorrow, poverty, crime, insanity and degeneracy upon the nation and the race.

SCIENCE VS. LIQUOR

BY E. O. TAYLOR, D. D.

From an address before the National Anti-Saloon League Convention, 1906.

ACCORDING to a conservative estimate, 180,000 people are destroyed every year in this country, directly or indirectly, for lack of very little and very simple knowledge touching the nature of alcohol and its principal effects upon the living human body.

What is this alcohol which is thus destroying outright, downright, 180,000 of our good citizens every year?

We have temperance sentiment enough in this country, such as it is. If it were a material thing you could shovel it into a cart and haul it away by the trainload. The brewer, distiller, drinker and drunkard all alike believe in temperance, none of them believe in intemperance, and that is temperance sentiment. The trouble is that it is not intelligent, up-to-date, or scientific sentiment.

THE LIQUOR QUESTION CAN BE SETTLED RIGHT WHEN SETTLED SCIENTIFICALLY

Evidently one thing is true, this question will never be permanently settled until it is settled right, and it will never be settled right in the nature of the case until it is settled in the light of modern science, instead of in the light of theory, guess work, social customs and legislation of by-gone ages.

THE DECLARATION OF PRESIDENT HADLEY

Dr. Hadley, President of Yale University, is quoted as having said: "As soon as the common people get into their possession the principal facts touching the nature of alcohol, they will drive every saloon out of the country." But the saloon is not yet driven out, the logic of which is that voters of this country do not yet possess that particular knowledge of the nature of alcohol which is necessary to effective action. To impart that necessary knowledge is consequently the first duty of the hour—not the last. But such a process implies education—scientific education, and that of a majority of voters. Such education is only possible ultimately through the medium of the public school system where scientific instruction can be adequately given, and where the majority of the future voters are to be found, and in the first six grades of the public schools to which that majority is limited. For, according to the report of W. T. Harris, ex-United States Commissioner of Education, the average school attendance is something less than six years of two hundred days each. As we are a government of majorities, the majority of boys who thus leave school uninstructed on this subject are likely to go to swell the saloon majorities at the ballot box when they become voters.

The inexorable logic of Dr. Hadley's statement then, is that the faithful, systematic, progressive, scientific teaching concerning the nature and consequent effects of alcohol, beginning with the primary grades and continuing through the habit-forming period of the intermediate to the high school, is essential to the ultimate and permanent overthrow of the drink habit and traffic in this country.

"Truth is within ourselves; it takes no rise From outward things, whate'er you may believe.

There is an inmost center in us all, Where truth abides in fulness; and around, Wall upon wall, the gross flesh hems it in, This perfect clear conception..."



SOME WONDERS OF THE BONES

NOTE. The following lesson is put in story form in the hope that in addition to serving as a guide in the regular development of this topic it will prove suggestive and useful in several other ways.

MONDAY evening, and the lesson for tomorrow was to be on the bones, but much as Harold Grant liked physiology he didn't see how just dry bones tied together with gristly tendons could be very interesting. Of course the skeleton was necessary but one almost wished that such uninteresting parts could be left out of the book. Nevertheless he was soon hard at work.

Presently the cheery voice of the family doctor broke in most pleasantly on his dull lesson.

"What, studying your physiology lesson! Well, that is sport! You youngsters have a great advantage over the boys of my day. We scarcely knew of such a study, more's the pity, for it might have saved some of us from much suffering and others from death." The last words were spoken sadly for one of Dr. Davis' dearest chums had died a drunkard.

"Didn't you ever study physiology?"

"Not really, till I began to study to be a physician. I did borrow a book once of a Seminary student but it was so dry and technical that not one boy in twenty would have read more than a chapter. However there was a medical college a few miles away and I visited the museum there with a student whom I knew and when I saw the parts of the body, that was different. I was never satisfied till I had graduated."

"I wish I could go to some museum, if it would make bones interesting," said Harold, "The heart and lungs and nerves are fine, but just bones, what can anyone see in them?"

The doctor's eyes twinkled. "Could you take your book and come over to my office a little while? Perhaps I could help you with your lesson."

Harold put on his hat with alacrity. Dr. Davis could make a thing interesting if anybody could.

As they went down the street, they met Harold's chum, Robert Bently, who was invited to join them. Passing by the market the doctor said he had an errand there, and the boys waited till he came out with an odd looking parcel in his hand.

When they had settled themselves in the doctor's cozy inner office, he asked them what the meaning of the word skeleton was, and Robert replied that it was derived from the Greek word "*skeletos*," meaning dry or dried up. Harold laughed and said that even the Greeks must have known how dry bones were.

"I thought I could guess why that lesson seemed uninteresting," said the doctor, "You have had dry, dead bones in your mind all the time. We will look at them from the standpoint of life and service. See here," and he opened his parcel from which he took the slender curved rib of a sheep, one end of which had been sawed open for two inches, the thigh bone of a calf sawed through lengthwise, two sections of bone from a beef's hind leg; one of these cut about three inches below the rounded head of the joint and showing the tendons etc., the other, a thin crosswise slice cut lower down and showing the yellow marrow within its solid ring of bone. All were quite fresh and had been neatly trimmed. These rosy tinted ivories certainly did look much more attractive than the boys had supposed bones could look.

He passed one of the halves of the calf's femur to each of the boys and asked them to examine the parts carefully.

"Is this the way a live bone looks?" asked Harold.

"Very nearly," said the doctor.

"It looks almost like hardened flesh it is so pink. There seems to be a little blood inside, and the outside looks as if it had a skin", said Harold.

The doctor carefully made a lengthwise slit with his knife on the outside of Harold's section and was able, without much trouble, to peel up the tough outer skin.

"This," he said, "is the bone skin, or, as your book will tell you, the periosteum."

"It is very important, too, because on the inside of it are the tiny blood vessels that contain the nourishment for the bones and also the tiny cells of bone which repair or build new bone. I suppose a large number of these cells would be found in your bones because you are growing tall so fast. The

blood carries them inside the bone and deposits them wherever needed.

"I once knew of a case where a bone was diseased and had to be entirely removed, but the surgeon was able to save the periosteum in good condition and in course of time a new bone grew."

"But how can blood circulate through solid bone?" said Harold. "You said that the blood carries the bone corpuscles into different parts of the bone as needed but although the bone looks pinkish it doesn't look as though there was red blood in it."

"There isn't much," said the doctor, "excepting where the larger blood vessels pass directly through the bone. The fluid circulating through the bone tissues is mostly lymph and the colorless part of the blood. Look at this thin crosswise slice of bone under the microscope and tell me what you see."

"It has ever so many little holes in it, and arranged in a circle around each of them are black spots with what look like tiny hair lines branching out in all directions from each. These hair lines from one system seem often to join those of another," said Harold.

"Look in your book, Robert, and see what those are," said the doctor.

"The holes are Haversian canals through which the blood circulates; the black spots are lacunae and the hair lines are little canals (canaliculae) that take the blood from the Haversian canals to the lacunae and so on through to the bone marrow. Then they must do something the same for the bones that the blood vessels and capillaries do for the flesh," said Robert.

"That is about right" replied their friend. "You see the bones are in all respects as well cared for as the softer tissues of the body. The blood circulates freely through them and from it the different parts select just the nutrition they need for their regular work, for repairing broken bones (when you have time look up the way broken bones knit and become as sound as ever) or even for making new ones. It is easy to prove that the food goes to the bones as well as to other parts of the body, for streaks of red have been found in the bones of pigs that had been fed madder. Now look at the femur as a whole. What is it like, Robert?"

"At the top it has a smooth rounded head and some rough bony projections; it is most slender in the middle, but the bone is the thickest there, and at the bottom are the two smooth knuckles of the knee joint."

"Besides that," Harold took up the thread, "the enlarged end appears to be filled with

red spongy plates arranged in an arched form over the rounded hollows containing the yellow marrow. Why is that, doctor?"

"Suppose I ask you some questions. Where are the muscles and tendons attached? Why could they not just as well be attached to the smaller round shaft. There may be (in a man) a weight of 100 pounds or more on one thigh bone. Could that best be borne on a surface as small as the bone would be at its center or on the enlarged surface of its head? Where would the pressure be greatest?"

"I see," said Harold, "The pressure on a slender column like this bone would be greatest in the center, so it is made extra strong just there and the marrow lessens the shock of blows. I read somewhere too, that a tubular post would sustain more weight than a solid one, and that is why they often use tubular pillars in bridges."

"But speaking of bridges," said the doctor, "look at the bone again and see if you can't think why the bone plates in the heads of the bones are arranged in an arched form."

Harold studied the bone intently for a moment and then exclaimed, "They are arranged like the supporting braces in a bridge! That is for the same purpose—to sustain the greatest strain with the least amount of weight. Isn't it wonderful!"

"You didn't think when you were flouting the bony skeleton as uninteresting, that these very bones were made and arranged according to great mechanical principles, and that some of the master builders had been humble learners from this marvelous structure, did you? Guess what suggested the dome of St. Peter's?"

"Tell us some more" said the boys breathlessly.

"Use your eyes some more", retorted the doctor. "What is the color of that spongy marrow in the heads of the bones and also in this rib?"

"Red, as if blood was in it," replied Robert. "What does that mean, that there are red corpuscles there?"

"One would really suspect as much," said the doctor with grave face but twinkling eyes. Harold caught the twinkle and plied him with more questions, and the doctor continued:

"Scientists have recently come to believe that it is in this very red marrow, and particularly in the ribs, and the enlarged ends of some of the bones, that the red blood corpuscles are manufactured. If a person loses a great deal of blood these little factories appear to know they have hurry-up orders,

and rush them through as fast as possible. Sometimes when the need is very great they seem to send out corpuscles that are not quite finished. You see that these 'dry bones' are very much alive, and at times very busy."

"Now look at the jointed ends of these bones. Note the soft velvety covering, and, on the beef bone, this little sac. Do you remember what it is?"

"It must be the synovial membrane and its sac of fluid to oil the joints," said Harold.

"Only it isn't oil at all," laughed the doctor, "so, lubricate would be a better word. When impurities from a too rich diet or from some other causes accumulate in the joints, this fluid is not provided in sufficient amount and then the person is said to have"—

"Rheumatism," finished Robert. "But it comes from carelessness about exposure to weather and wetting the feet, too, doesn't it?"

"Yes", said the teacher, "the so-called 'growing pains' of boys are often light touches of rheumatism due to that cause."

"Doesn't gout come from using alcoholic drinks?" asked Harold. "I suppose that that is just a sign that there is a great deal of poison in the body and the pain there tells of the trouble."

"You are just right there. Some of our great doctors go so far as to say that gout is never caused in any other way, and another thing, our surgeons will tell you that if a drinker breaks a bone it heals much more slowly and in some cases, almost never heals. Since the alcohol is in the blood, and the bones get the food for growth and repair from the blood which circulates through them, the poison does mischief there the same as it does everywhere else.

"But to return to our subject, can you hold living bones clearly in mind if we look at some dead ones?" The doctor threw back some draperies and displayed a skeleton to the eager eyes of the boys. He brought also a box containing the separate bones of a skull.

"Close your eyes for a moment and think just how moist and pink the living bones look, and imagine the red, and the yellow marrows, the tiny blood tubes, and the blood circulating all through so that here just as in other parts of the body, the busy processes of life are going on.

"Here standing before us, each in its own place, are the 200 bones.

"Let us see how they serve us. We cannot go into all the details. It is not necessary for the books do that, but we will try to see

them working together as a whole, and in their right relations to each other.

"The bones have general and also specific duties. What are their general duties—that is, what is the work of the skeleton as a whole?"

"To give form to the body and to support the softer tissues", said Robert promptly.

"That was glibly said", rejoined the doctor, "but imagine what it means. This framework weighing only 20 pounds (1-7 of the body-weight) supported and gave shape to a mass of 120 pounds of tissues and fluids more or less unable to bear its own weight. You know the helplessness and comparative uselessness of the jelly fish and you can readily see that man without his bony servants would be scarcely less so.

"Now let us see what the particular duties of some of them are. What are located inside the head and in the trunk?"

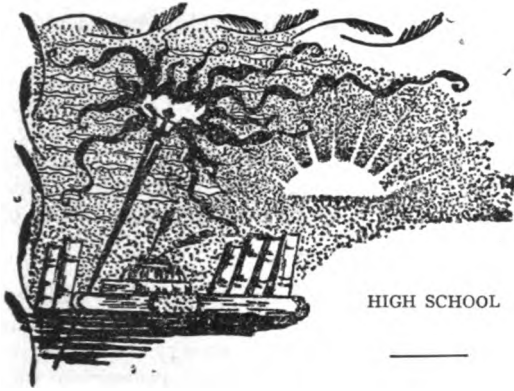
"The vital organs," said Harold.

"Examine these bones and note how wonderfully they are adapted to their work. Notice the skull. See how the bones are made of two separate plates with spongy layers between and joined at their margins by these interlocking irregularly-fringed edges. The plates are thickest where there is the greatest likelihood of blows. Here are the winding passages in the inner ear and here, the remarkable nasal bones composed of plates so thin as to be almost transparent. Through these smooth little holes pass the blood vessels and inside are the grooves in the solid bone where the larger ones are partly imbedded.

"While we are looking at the skull we must not overlook the most wonderful joints in the body, those which allow the head to move in so many different ways. Notice the little oval-shaped, rounded knobs, or condyles, which rock in corresponding hollows on the atlas, the first bone of the spine. In the centre of the atlas is the opening through which the tooth-shaped peg of the axis, the second bone, passes, and around which the head resting on the atlas pivots.

"Between these two bones of the spine, as between all the others, are the elastic pads of cartilage the aggregate thickness of which is over six inches. The spine taken as a whole is a marvellous contrivance. Think of trying to make a column rigid enough to bear a considerable weight, elastic enough to bend nearly to a circle, and so adjusted that the numerous organs in front of it and the prolongation of the brain, the spinal cord, which

(Continued on page 144a)



INDIVIDUAL HYGIENE

Note: In the discussion of this topic the pupils should be led to see that success in achieving and keeping vigorous strength, like success in other lines, calls for some degree of specialization, since it depends not only upon obedience to general rules of health equally needful to all but also upon specific modifications of those rules to fit individual needs and circumstances. Hence it might be well to ask each student to write out a careful analysis of his own physical state, answering such questions as those given below. These little papers may be passed in unsigned, and discussed in a general way, the idea being to make the students stop, measure their strength and face their weaknesses while they have the best opportunity of correcting them. Warn the class that in a certain sense each has most to fear from his strongest organ because there is a tendency to abuse an organ that endures uncomplainingly a great deal of work.

1. INQUIRY INTO PERSONAL CONDITIONS:

(a) Is my digestion or any part of it weak? (b) Is my lung capacity all it should be? (c) Are my nerves steady and capable of responding to some strain? (d) Do ruddy cheeks and healthy skin show a good supply of red blood? Is the heart steadily pumping away, or is it "irritable" from the use of narcotics like tobacco or alcohol? (e) Have I the vigor and endurance a young person should have? (f) In what ways can I strengthen my weak points and avoid weakening my good ones? (g) What would be the probable effect upon my health, vigor, and career, of beginning (or continuing) the tobacco habit or, the so called moderate use of alcoholic beverages? (h) In view of the effects of these narcotics [noted below] and especially the fact of the probable formation from the use of the latter, of a habit which may and often does become uncontrollable, can I afford to jeopardize my health, success and higher ideals by the use of these or other narcotics?

2. HOW TO AVOID IMPAIRED HEALTH AND CONTAGIOUS DISEASES:

(a) By keeping the body in the highest state of efficiency by following an appropri-

ate scheme of diet, exercise, etc. (b) By avoiding infection and employing preventive measures. (c) By avoiding the use of tobacco which:

(1) Damages the nervous system, impairing the action of the heart and of nutrition (See January JOURNAL); (2) impairs special senses, particularly sight and hearing; (d) By avoiding alcohol which:

(1) Interferes with metabolism; (2) is very injurious to the brain and nerves; (3) often injures structure and impairs functioning of vital organs; (4) impairs bactericidal power of blood and activity of phagocytes; thus leaving body open to invasion by disease germs; (5) tends to shorten life (See p. 81, February JOURNAL).

HYGIENE OF THE HOME

Note: The following topics afford excellent opportunity for group work. For instance, assign the topics under 1 to one section of the class, instructing them to prepare a report embodying not only the reasons for the necessity of these conditions, but also the best methods of securing them which they can ascertain by inquiry, observation and study.

1. THE HYGIENIC HOUSE, HOW LOCATED AND CONSTRUCTED:

(a) Location, frontage and provisions for sufficient sunlight in each room,—(sunlight destroys vitality of disease germs which, however, are able to live almost indefinitely in dark, damp rooms); (b) ample ventilation.



Plenty of fresh air.*

Courtesy of Phrenological Journal.

by approved methods; (c) cellar, light, airy, dry; (d) system of plumbing, or cesspools capable of safely disposing of sewage; (e) smooth, hard-finished floors free from cracks, and concave moulding to do away with corners hard to be kept clean; (f) inside walls finished with paint or enamel, kalsomine, or wall papers free from injurious coloring matters. Which is best? Most economical?

2. FURNISHINGS OF HOME:

(a) Draperies of light and transparent material; heavy draperies only where necessary; (b) little or no upholstered furniture; (c) rugs instead of carpets. Why?

3. CARE OF HOME:

(a) Sweeping with sweeper or with broom, using damp tea leaves or wet paper to which dust will adhere,—(where dust rises, germs are more dangerous because floating at higher level); (b) dusting with damp cloth or with one slightly moistened with kerosene; (c) frequent beating in open air and sunshine, of heavy draperies, rugs and upholstered furniture; (d) particular oversight of refrigerators, cellar, and drainage; (e) necessity of thorough disinfection of sick rooms, especially where infectious diseases have been present; (f) advisability of tenants asking that the house into which they are to move, be fumigated to destroy germs which may have emanated from mild, undected forms of infectious diseases.

4. HOUSEHOLD SUPPLIES:

(a) Water supply (public or private). (1) Is it uncontaminated by sewage, vegetable or organic matters, or by disease germs? (Running water does not, except in a very limited degree, free itself from impurities. Suspected water should be boiled.) (2) Methods of filtering water. (See "Town and City," Chap. XVI.)

(b) Ice supply. (1) Is ice cut from ponds or streams the water of which is potable? Remember that polluted water makes impure ice, and the more malignant disease germs are not injured by freezing. (Michigan Health Bulletin.)

(c) Milk supply: (1) Are the sources unobjectionable so far as can be learned? (2) Is the milk allowed to stand in unsanitary surroundings or in receptacles which have not been properly cleaned, or left uncovered so as to permit impurities or germs to enter? (3) Is it kept cool with ice when necessary, or allowed to stand in the sun or in warm atmosphere? Ice keeps microbes from multiplying; warmth encourages their rapid multiplication. (4) Is the milk free from formalin or other dangerous preservatives? Unless the purity is undoubted, milk, especially

for the use of invalids or children, should be pasteurized. Explain this process.

(d) Food supply: (1) Are the food materials (i.e. groceries) pure? (2) Are canned goods and perishable foods fresh? Danger from ptomaines in stale goods. (3) Are the bakeries and restaurants in sanitary condition? (See Reports of Mass. State Board of Health, etc.)

5. HOME DIETARY:

(a) Relative values of proteids, carbohydrates and fats,—(new experiments showing that each can furnish energy for work or heat). (1) Comparison of vegetarian with meat diet—advantages of each; (2) relishes, tea, coffee, cocoa; (3) alcoholic beverages positively not to be ranked with foods. Why? (See JOURNAL for October, November, 1906, March 1907.)

(b) Selection of well balanced ration adapted to necessities of the inmates of the home with consideration of: (1) Capacity to digest; (2) muscular activity,—need of more proteid and carbohydrates. Vegetables, or, meat? (Refer to recent experiments in favor of former made by Prof. Fisher of Yale.)

(c) Mental work (practically a sedentary life): (1) Easily digested food,—(Process of digestion, especially if difficult, interferes with effective working of the brain); (2) less food, particularly non-proteid food, which in excess is likely to lead to the storage of fat or to overtax the digestive organs; (3) value of fruit and cereals.

(d) Adaptation to weather: (1) Summer,—vegetables and fruits; less meat; (2) winter,—more food particularly carbohydrates and fats which furnish heat and lead to storage of non-heat-conducting layers of fat.

(e) Preparation of foods: (1) Importance of making foods appetizing so as to assist digestive processes; (2) proper methods of cooking; frying, why undesirable; (3) importance of cleanliness of all utensils and of the person of those who cook and serve foods; (4) need of careful cleansing of all uncooked foods like fruits, vegetables, etc., which have been handled; (5) why all foods should be protected from flies and other insects; (6) danger of using alcoholic liquors in foods.

(f) Alcohol an enemy to the home: (1) By absorbing money needed for proper food, clothing and housing of family; (2) by its responsibility in causing lowered morale which makes the drinker more willing to remain in squalid surroundings; (3) by impairing physical health so that there is greater susceptibility to disease; (4) by "implanting a train of degeneracy in offspring." (See p. 129; also March JOURNAL.)

(Continued from page 142)

it protects, are not at all disturbed. Moreover, the brain must be borne without jarring so the column is made in the shape of a double curve. I am sure I do not need to warn you to be most careful to avoid injuring it for even slight injuries or curvatures are apt to affect the spinal cord and thus the whole nervous system."

"Isn't that one of the reasons why we must sit and stand correctly?" said Harold. "I think the book says that actual curvatures come from standing on one foot, leaning over desks and the like."

"Yes, indeed, when the bones are soft as they are in childhood and in youth they are so flexible that they are easily distorted, and if they harden that way, the mischief can never be repaired. Tight belts are bad, too."

"We know what service the bones in the limbs do us, so tell us some curious things about them, please," said Robert.

"Perhaps I might tell you that the bones of the arms are attached to the pectoral girdle and those of the legs to the hip girdle, but I will leave you to find out for yourselves what bones form those girdles and the way in which they are articulated.

"I might suggest that the long bones are slightly curved for the same reasons that the

spine is, that certain bones of each foot strike the ground like a tripod, forming an arch. Which ones are they, and what is the object of mounting the body on two arches?"

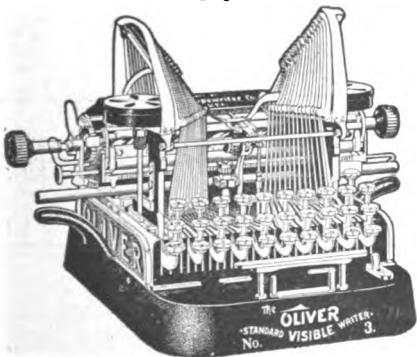
"You will be interested to compare the upper and lower limbs, part by part, and consider their difference in use as well as the difference between the way a man and the highest types of animals like the ape use them; all through your coming course in zoology, note the likenesses and differences of the creatures and man. You will find it fascinating indeed."

"There are two or three things about which I wish to warn you. Be careful of your knees, for injuries there often result in stiff limbs or occasionally, even in the loss of one. I want to see you grow into two symmetrical men. Proper exercise will tend to increase your stature but the use of tobacco and especially cigarets will be apt to injure your bones and stunt your growth, and the damage can never be entirely repaired."

"We never will use them, nor alcoholic drinks either," they said earnestly. "How could we with your example before us? Thank you so much for helping us Dr. Davis."

"I am sure such a decision repays me for many evenings. Good night, my lads."

The **OLIVER** Typewriter



The Standard Visible Writer
Universal Keyboard

WINNER OF AWARDS EVERYWHERE.
Art catalogue free. Ask for it.

The Oliver Typewriter Company
89-71 Federal Street, Boston, Massachusetts

Melodic Music Series

First Reader, \$0.25 Third Reader, \$0.40
Second Reader, .30 Fourth Reader, .50

This course presents a graded collection of choice songs, not requiring the use of charts. The books clearly outline each year's work, providing all the necessary material, so graded and explained that the course can be conducted without difficulty by teachers who have had but little experience in teaching music.

There is a simple and natural development in rhythm, in chromatics, in minor and part writing, and in tone study. Throughout the song element is the basis of study. The words of the songs are especially fitted for each grade. They pertain to the child world, and are bright, cheerful and interesting.

In addition to the works of classical composers, and a large number of folk songs, the series include as noteworthy collection of songs contributed especially for these books by eminent living composers. Never before have so many choice, original songs been brought together in a series of this kind.

American Book Company

New York Cincinnati Chicago Boston



DOES 40% SAVING INTEREST YOU

School Physiology Journal Club Offers

Every group must contain the SCHOOL PHYSIOLOGY JOURNAL. Magazines may be sent to different addresses. Subscriptions may be new or renewals. Many more combinations for the asking.

FAMILY GROUPS.

World's Work, ‡	\$3.00	} OUR PRICE \$3.25
McClure's, ‡	1.00	
Delineator, ‡	1.00	
Physiology Journal, . . . .	.60

Review of Reviews,	\$3.00	} OUR PRICE \$3.10
Woman's Home Companion,	1.00	
Success,	1.00	
Physiology Journal, . . . .	.60

Review of Reviews,	} OUR PRICE \$3.75
Any two of Class A,	
Any one of Class B,	
Physiology Journal,	

YOUNG FOLKS' GROUPS.

Little Chronicle,	1.50	} OUR PRICE \$2.40
Or American (Leslie's),	1.00	
American Boy,	1.00	
Our Little Folks (new),	1.00	
Or Success,	1.00	
Physiology Journal,60	

TEACHER'S GROUP.

Normal Instructor,	\$.75	} OUR PRICE \$1.50
Primary Plans,	1.00	
Physiology Journal, . . . .	.60

FARM GROUPS.

Farming,	\$1.00	} OUR PRICE \$2.00
American Farmer, . . . .	.40
Reliable Poultry Journal, . . . .	.50
Kimball's Dairy Farmer, . . . .	.50
Art Portfolio (6 pictures),	1.00	
Physiology Journal, . . . .	.60

CLASS A.

Success,	1.00	} Any 1 with JOURNAL \$1.10
Woman's Home Companion,	1.00	
American (Leslie's),	1.00	} Any 2 with JOURNAL \$1.75
Our Little Folks, (new)	1.00	
American Motherhood,	1.00	} Any 3 with JOURNAL \$2.35
Primary Plans,	1.00	
Teacher's World,	1.00	
Farming (with accident policy),	1.00	

CLASS B.

American Boy,	\$1.00	} Any 1 with JOURNAL \$1.00
Everyday Housekeeping,	1.00	
Normal Instructor, . . . .	.75	} Any 2 with JOURNAL \$1.50
Designer, † . . . .	.50	

CLASS C.

C. E. World,	\$1.50	} Either with JOURNAL \$1.70
Suburban Life,	\$1.50	
Little Chronicle,	1.50	

‡ Single subscriptions for full price only.

† This combination cannot be changed.

‡ Less 10 cents if this is chosen.

Anti-Cigarette Helps.

Power of the Tobacco Habit, \$.20.
Especially Harmful, \$.02.
Samples of each \$.50.

Timely booklets on a timely topic. Teachers! Parents! Do you know what can be said against the tobacco habit? These pamphlets will tell you.

The Cigaretist, \$.05. Boy and the Cigaret, \$.05. Why the Cigaret is Cigarettes and Tobacco, \$.05. The Cigaret and the Schoolboy, \$.01. Samples of Anti-Alcohol Leaflets, \$.10

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Nov. 1907 *over*



Boston Public Lib



THE SCHOOL PHYSIOLOGY JOURNAL



• CONTENTS •

	PAGE
Necessity for Teaching the Principles of Temperance	1
Lessons in Habit Culture	4
A Physical Renaissance	5
Primary Lesson—The Skin and Cleanliness	6
Editorials	8
Practical Methods of Dealing with the Cigaret Problem	9
Grammar Lesson—Brain and Nerves	10
Fact and Theory	14
Some Important Recent Experiments	16

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid, to any address on request.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

A New Supplementary Reader
by FRANK G. CARPENTER

Carpenter's Industrial Reader—Foods

60 CENTS

THIS is the first of a new series of supplementary readers, written by the author of the phenomenally successful Geographical Readers. The book gives children a knowledge of the production and preparation of foods, and shows how civilization and commerce grew from man's need of foods and the exchange of foods between the various nations. The author takes the children on personally conducted tours to the great food centers of the world, to the markets of exchange, to the factories, the farms, the forests, and the seas. Together they go to the wheat fields, the flour mills, the cattle ranches, and the packing houses. They learn to understand the manufacture of dairy products, and visit the fisheries, the orchards and vineyards, and the tea, coffee, rice, and sugar plantations. The volume is as interesting as any story book and is profusely and attractively illustrated from photographs.

American Book Company

New York Cincinnati Chicago Boston

A young teacher whose efforts to inculcate elementary anatomy had been unusually discouraging, at last asked in despair:—

"Well, I wonder if any boy here can tell me what the spinal cord really is?"

She was met by a row of blank faces, till finally one small voice piped up in great excitement:—

"The spinal cord is what runs through you. Your head sits on one end, and you sit on the other."—*Sacred Heart Review*.

THE SUFFOLK

ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

234 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

THE SCHOOL PHYSIOLOGY JOURNAL, (17th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "State Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET,

BOSTON, MASS.

Please mention the School Physiology Journal when writing to advertisers.

Digitized by Google

School Physiology Journal

Vol. XVII

BOSTON, SEPTEMBER 1907

No. 1

The Keynote of Life's Harmony

By George Klinge

THE keynote of life's harmony is sacrifice,
Not twice, or thrice,
Beneath each sun will souls bow down
To lay the crown
Of will, or time beneath strange feet,
But many times, that life's chords may be sweet.
Who sacrifices most
Drinks deepest life's rich strain, counting no cost,
But giving self on every side,
Daily and hourly, sanctified
But in the giving.

Living is but the bearing, the enduring,
The clashing of the hammer; the cutting,
The straining of the strings,
The growth of harmony's pure wings,
Life is the tuning-time, complete
Alone when every chord is sweet
Through sacrifice. No untried string
Can music bring.
No untried life
Has triumphed, having passed the strife,
True living is learning all about the giving.—*Selected.*



THE NECESSITY FOR TEACHING THE PRINCIPLES OF TEMPERANCE

BY E. CLAUDE TAYLOR, M. D., F. R. C. S.

Hon. Secretary of the Committee of the British Medical Profession Formed for the Furtherance of the Teaching of Hygiene and Temperance in Elementary Schools

IF the views as to the value of abstinence from alcoholic beverages be accepted, a strong argument is admitted in favor of providing such adequate instruction and judicious persuasion as shall secure to each individual the preventive forces of accurate knowledge and moral incentive.

Those who may become the victims of the alcohol habit cannot readily be convinced of the error of their way. Even when their mistaken course is recognized and regretted, the power of restitution has often been seriously impaired, and in some cases it would seem to be hopelessly lost.

It is clear, therefore, that, on the grounds of reason as well of expediency, efforts should be made to provide rational teaching regarding the dangerous influence of alcohol and the evils which must result from alcoholism, to as large a number of our population and at as early an age as possible.

GENERAL PRINCIPLES

In considering this very practical subject it is necessary to recognize the general principles which should guide our actions. There is a sound scientific basis for the contention that the teaching of temperance should be commenced in the early years of life.

Our forefathers were wont to debate

"What cause
Moved our grandparents in that happy state,
Favor'd of heav'n so highly, to fall off
From their Creator?"

Charles Darwin and his followers have delivered us from this mediaeval idea and have given us the more inspiring thought that the human race has ever been, and still is, climbing *toward* a high estate. We know, also, that the history of the race is recapitulated more or less closely in the development of every individual.

We know that starting from the single, though complex, cell the individual in his development passes through stages that are now represented by the various orders of the "lower animals," and though at birth great progress has been made, the infant is then but in the ape-like stage which preceded the fully human. Normally, he rapidly gains successive steps, but each of these echoes long periods in the history of the race when men, albeit somewhat slowly and always with some relation to the requirements of the day, were attaining to greater abilities and evolving nobler qualities. The elemental struggles with nature and their fellow beasts for food, and the coarse ravening upon their prey gradually gave way to hunting with more artful weapons. As the mere acquisition became easier, so there was more time to devote to the further preparation of their food; then to the embellishment of their dwellings. Only after considerable development did Man turn his attention to the improvement of means of communication by writing, and still later to the use of such convention for registering

thoughts for mutual meditation and study.

Now if the child be watched, he will be seen to pass through all these stages, and though happily some may be abridged, the order can never be altered.

Fortunately, the attention of educators is being more and more directed to the principle that teachers must endeavor to lead the unfolding mind by consciously emphasizing the qualities that in former ages benefitted the race, while curbing and minimizing those traits that are reminiscent of crude and cruel instincts. The passive innocence of the babe is thus drawn on to the active benevolence of man.

In quite early years, particularly from three to seven, there are two conflicting interests, one which may be termed the natural animal appetite, the other, the higher instincts for love of home, of cleanliness, good order and care of others. The drunkenness we see today is due to the fact that the first has not been adequately checked nor has there been cultivated the second. Let those early years pass and our task in teaching temperance, i. e. self-control, is enormously increased, because it has a gross and selfish appetite to contend with, and cannot summon to its aid the nobler aspirations of a citizen.

Seize those moments rightly and the children will delight in the simple exercises, which after all, form the basis of habits. Especially should that potent factor, expression, be employed, and they should be directed, for example, to teach their dollies the elements of hygiene and the principles of temperance. Much of the elemental power of self-control may be cultivated also in play-time and in organized games.

Later, of course, intelligent and conscious co-operation with the teacher's efforts at instruction must be gained from the child by the use of books and lectures.

These facts teach patience but they point also to the infinite potentialities that exist in

a child ("of such is the Kingdom of Heaven") which may be realized by him if he be guided aright.....

THE ACTION OF THE STATE

It must be recognized that, to make the teaching universal, the State must be responsible for the work. America, stimulated to action by the efforts of the late Mrs. Mary H. Hunt, has long adopted means for the teaching of physiological hygiene, with special reference to the effects of alcohol and other narcotics. Such instruction, begun in Vermont in 1882, is now compulsory in the United States in all schools under State or Federal control.

In our colonies Canada, Victoria, South and West Australia, New Zealand and Natal, considerable advance has been made.

On the Continent, we find much has been accomplished in France, Sweden, Denmark and Holland, while other countries are preparing to follow suit.

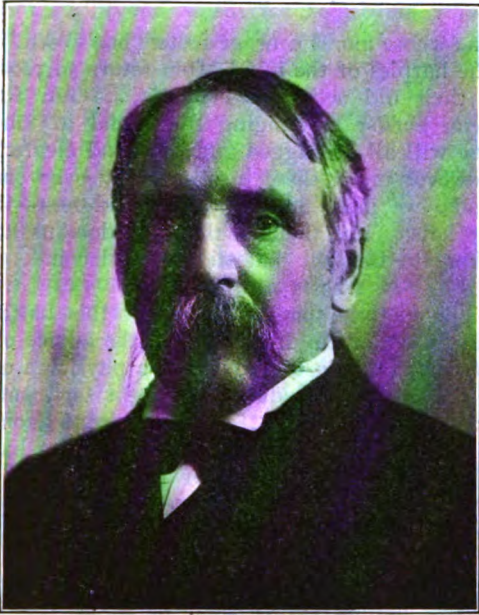
In all the State schools under the control of our War Office teaching of temperance has, for some years, been compulsory.....

We believe that the final solution to which we must come as soon as possible is the training of all teachers in the subject so as to be able to bring temperance into the school work in other ways than merely in the set lesson.



JOHANNES BERGMAN, PH. D.
President International Temperance Bureau.

Chiefly may references be introduced into the nature-study and observation lessons, but they may occur also in the course of various other lessons, such as the following: in arithmetic, questions may be set on thrift, based on expenditure on drink and the number of the population; in dictation and reading, books may be used which contain suitable accounts of the moral effects of intemperance, or simple statements as to the preparation and chemical properties of alcohol and the common alcoholic beverages; in writing, temperance mottoes may be set as "copies"; in domestic economy, the teacher should place alcohol in its proper category as a poison, and distinguish



T. D. CROTHERS, M. D.

American Representative International Temperance Bureau. A
Director of Scientific Temperance Federation.

it from nutritious and wholesome foods.

But it must be repeated, that long before the child is fit to grasp those acquirements that have been attained comparatively late by the race, for example, reading and writing, he is properly disposed to the elementary notions of discipline and order on an appreciation of which alone can be based any profitable discourse as to the details of alcoholic drinks and of their harmful effects.....

At the present day our universities do much to control educational work throughout the country, partly because of their prestige and intellectual influence, and partly because many intending teachers give special attention to those subjects required to secure such degrees and distinction as will enable them to obtain the most lucrative positions in the scholastic world. It is of the utmost importance, therefore, that university authorities should make provision for adequate study of hygiene and temperance.....

Let those whose aid is sought for the maintenance of physical vigor and the control of man's manifold ills join the ranks of progress and the day will hasten when in these happy isles there shall be a healthy and vigorous, because a sober, nation.

From *The Drink Problem*, T. N. Kelynack, Ed.

"The loving worm within its clod
Were diviner than a loveless god
Amid his worlds."

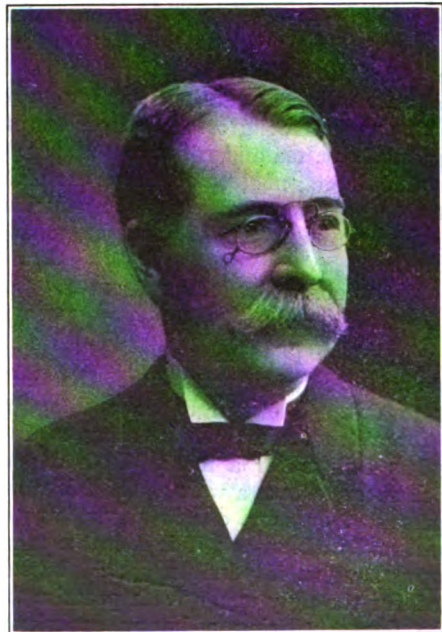
THE JOURNAL takes pleasure in acquainting its readers this month with the faces of Mr. William C. Lilley of Pittsburg, president of the Scientific Temperance Federation organized in Boston last December; Johannes Bergman, Ph. D. of Sweden, president of the International Temperance Bureau organized at the Anti-Alcohol Congress held at Stockholm in July; and Dr. T. D. Crothers of Hartford, Conn., who was an accredited delegate of the Scientific Temperance Federation to this Congress, as well as an official representative of the United States Government. Dr. Crothers was chosen as the American member of the Committee of the International society in which eighteen countries are represented.

The scope and purposes of this International organization are on much the same lines as the American Scientific Temperance Federation, which will endeavor to keep on file for American students of the question, duplicates of documents, periodicals, pamphlets and general information collected by the International organization, the headquarters of which are to be at Lausanne, Switzerland.



This way, men are men, no difference! Best and worst, they love their boys after one fashion: wealth they differ in—some have it, some have not, but each and all combine to form the children-loving race.

—Browning



WILLIAM C. LILLEY

President of Scientific Temperance Federation.

LESSONS IN HABIT CULTURE

A PHYSICIAN who can effectively "minister to a mind diseased," cure the physical ills that are due to bad mental habits, and, in addition, point the way to the truly spiritual life which is the strongest possible preventive of all ills,—the physician who can do all this, can have the world for his hospital. That there are physicians qualifying for such a practice is indicated by an article by Dr. John Warren Achorn of Boston, in the *Boston Medical and Surgical Journal* of August 22, 1907.

The value of the article extends far beyond the ranks of physicians to every one of the general public who has worries and bad habits,—and who has not?

It is of special value to teachers, because each has not only her own habits and worries and aspirations to deal with, but also those of the 30 or more children for whose character and morals she feels solicitous or responsible.

A brief summary of the main points in the article referred to will show how one may at least make a beginning in the correction of bad habits, mental and physical, and in the promotion of spiritual growth.

COMMON MENTAL FAULTS

The chief mental faults that detract from one's comfort and happiness, and that of others, are: fear, false pride, over-sensitiveness, selfishness, envy, avarice, introspection, retrospection, obstinacy, loss of temper, jealousy, worry, hurry (often due to procrastination) hysteria, insomnia.

The chief physical faults to be recognized and conquered are: gross habits of eating, eating hurriedly, tea and coffee excess, neglect of regular habits, neglect of sleep, surrender to passions or desires known to be injurious, lack of cleanliness, alcoholism, the tobacco habit.

REMEDIES FOR BAD HABITS

The first essential in the cure of faults is a willing mind. "The person who 'wills' wins; the person who 'tries' presupposes that he is going to fail. The will to do a thing has faith for a companion, while trying to do a thing has failure for a mate. It is a good practice never to face a worry. If this worry is represented by some one in anger, turn on the heel and walk away; if it is in the mind, a happy thought, if possible, should be substituted for the ugly one. With practice this can be done, utilizing a happy experience, a fascinating story, a sentiment that appeals to the higher intellectual faculties, a short walk, the companionship of some one for a

time whose moral courage fosters one's own... The harpies of the mind often return to roost in their old accustomed places.... Gun for them, persist in winging them, and in time they will all be bagged and the mind cleared. However much these birds may fly over our heads, we must not let them build nests in our hats. The thought that flits does us no harm, the thought that sticks does harm."

MEANS AND MOTIVES

The motives that gird one for this battle are: "Love of children, faith in the advice of a friend, faith in the advice of a physician or of the minister, pride of the right sort, ambition, love of family.... the desire to avoid sickness, or to have nothing in one's life that might not be known; best of all, the spiritual desire by far the most potent, for spirituality carries real faith with it and faith cures about anything except organic and infectious diseases of a serious nature, while it goes far toward helping banish some of these.

"Concentration is one of the things required for the cure of any habit.... Concentration of the mind is the thing that ails a fellow when he falls in love."

The rules to be remembered are brief.

1. Resolution to do the thing required.
2. Memorization of an affirmative expression—a substitute for the negative. Keep up the practice until the memory takes on the affirmative and the negative fades.
3. Concentration upon the purpose.
4. Helpful influences, such as optimistic friends, elevating reading, change of scene or thought, exercise, or prayer, if one has faith.

SPIRITUALITY

The spiritual man is not satisfied with peace of mind, he must be in touch with God through faith.... One who has a spiritual nature can soon raise his powers of resistance to a high level and weld the link of faith in the chain of his life, so that it becomes as easy and comforting for him to talk with God as it is easy and helpful to talk with a dear friend, and more so.....

"People at the level of mere good citizenship do not all grasp higher teachings; individuals who indulge in mental practices that distract, or physical practices that debilitate, are poor absorbers of spiritual teachings....

"These worrying, nervous, threadbare people all about us, broken by the stress of modern civilization, are in need of just such relief as treatment and cure of their habits will afford. Their habits once mastered here, they themselves are better fitted for something higher, for something far beyond and above

nature even, something so transcendent as to be quite beyond words; for something which profoundly influences life and the spirit of man; for something compared with which all other things are weak and unprofitable.

"For I have felt a Presence that disturbs me with the joy of elevated thoughts; a sense sublime of something far more deeply inter-fused, whose dwelling is the light of setting suns.

"May we so live that we may grow nearer this glorious Presence which so exalts the beauties of the world for us."

A PHYSICAL RENAISSANCE

BY E. L. TRANSEAU

THE POPULAR SCIENCE MONTHLY for August contains an inspiring article on "The Re-Awakening of the Physical Conscience."

There is an increasing number of special physical training teachers employed in the schools of the United States; athletic societies and competitive athletics are extending even into the Sunday schools. The attendance at the gymnasia of the Young Men's Christian Association has increased three-fold in ten years. Sixteen per cent of the membership of the Young Women's Christian Association is enrolled in the physical training classes. City play-grounds are spreading, their equipments furnished, some from public, some from private funds. One item reads:

"A philanthropist has offered to spend \$4,000,000 in laying out and equipping a play-ground, bathing pavilion and beach on Staten Island, and providing a steamboat to take a large number, probably a thousand, poor children from New York to the beach and back every day."

This interest in a physical renaissance is by no means confined to the United States.

The London authorities declare that it is their intention to have a play-ground within a quarter of a mile of every home. The Pope, against great opposition from his court, became patron of the athletic societies of Italy, has had contests held in the gardens of the papal palace, and he himself bestowed the medals. To his protesting Cardinals he said, "Come and see these brave boys, you will be rejuvenated by fifty years, and they will gain from it in the health of their bodies, and above all in that of their souls."

Germany is taking up play systematically, publishes a magazine devoted to play, play conferences are held, and thousands of teachers are being taught to play with the children.

France, as yet, takes less interest in play. The children's games are mostly trivial. Some municipalities have offered prizes for athletic contests, in which chiefly factory employees take part.

Little Porto Rico is beginning to substitute athletic contests for cock-fighting, and China, the great immovable, so-thought, now unmistakably awakening, has decreed that parents are not to bind their daughters' feet. A newspaper for women, edited by a Chinese woman, has for one of its objects the teaching of hygiene.

The Japanese, who make physical excellence a part of their religion, have been increasing their stature, "while the recruits in the English army have deteriorated in physique owing presumably to intemperance and vicious living."

The interpretation given to this world-wide awakening to physical advancement is that it is the forerunner of another brilliant period in the intellectual history of mankind, such as crowned the immortal country of the Olympic games, 2,000 years ago.

Man, passing out of individualism into fraternalism, out of sordidness, vulgarity, brazen display of wealth, and public venality into higher and nobler manhood and a purer, simpler and more wholesome life, is what this inspiring writer, Dr. Richard Cole Newton, sees in this general "physical renaissance."

Teacher—Willie, please give me a sentence in which the verbs "to set" and "to sit" are used correctly.

Willie—The United States is a country on which the sun never sets and on which no other country never sits.—*Puck*.

OUT IN THE FIELDS WITH GOD

The little cares that fretted me,

I lost them yesterday

Among the fields above the sea,

Among the winds that play;

Among the lowing of the herds,

The rustling of the trees,

Among the singing of the birds,

The humming of the bees.

The foolish fears of what might happen—

I cast them all away

Among the clover-scented grass,

Among the new-mown hay;

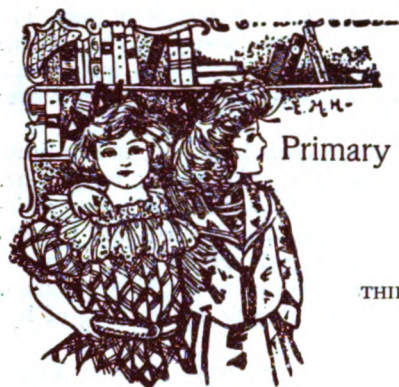
Among the husking of the corn,

Where drowsy poppies nod,

Where ill thoughts die and good are born

Out in the fields with God.

—*Elizabeth Barrett Browning*.



Primary Lessons

THIRD YEAR

THE SKIN AND CLEANLINESS

THE SKIN AS A COVERING

PROVIDE as illustrative material two similar apples one of which is to be peeled several hours in advance of the lesson in order that the pulp may have time to become dry and discolored; one or more walnuts or other nuts having an outside shell (one should be cracked to show the meat); and, if available, sections of fair-sized twigs or of the small limb of a tree, preferably white birch. From the latter remove a portion of the outer skin showing the tender inner skin, and another exposing the wood.

Show the apples, slicing off a little piece of skin from the apple that has not been pared. Let the children compare the dirty, shrivelled pulp of the peeled apple with that of the other and note that as long as the skin remains, the pulp keeps perfectly moist and clean. Why, then, do the apple and other fruits need a skin?

Show the nuts. How many shells have they? What other nuts have two shells and why the need of double shells? The class will be quick to see that the inner shell protects the meat. If necessary, explain that the outer one is either prickly or has an unpleasant taste to keep the squirrels from eating the nuts before they are ripe. When do these outer shells drop off?

Allow the children to examine the sections of twigs. How many skins has the tree? Which is the tougher? Why? What do we call the skin of a tree? See that the children get the thought that in each of these cases the skin, shell, or bark is a covering for more delicate parts underneath.

Pinch up the loose skin on the back of the wrist. What is under the skin? If one scrapes or burns the skin off, how does that place feel? Lead the class to see how tender the flesh is and how necessary that it have a skin to cover it.

Show pictures of sheep and shepherd dogs if the animals are not familiar to the class. What do the sheep have growing from their skins? Why? Where do sheep get their living? Bring out the fact that sheep usually feed in rough pastures and wander among bushes whose thorns would tear their skin and flesh. What kind of coats have sheep dogs? Why do they need coarse, shaggy hair? What sort of a skin does a fish have? (Show fish scales if convenient.) Why? Bring out the point that each creature has the kind of a skin that best suits its needs.

Have you a scaly skin? Explain that although our skins do not look scaly they are so, that the scales are so tiny that we cannot see them, and that they overlap each other like the scales of the fish, or the shingles of a house.

RENEWAL OF THE SKIN

What creatures slip out of their skins when new ones are formed underneath? (Frogs and toads, beetles, and some other insects. Show cast off skins if possible.) How many have seen a toad get out of its old skin? What creatures shed their shells? (Lobsters and crabs.)

Do we change our skins in the same manner as any of these? Speak of the tiny scales of skin often to be seen on our clothing and lead the class to see that one's old skin wears off just a little at a time and that new skin grows underneath to take its place. Who has noticed the new skin that forms underneath a blister?

CARE OF THE SKIN

How many have had chapped hands in the winter? Explain that the cold weather dries the skin so that the scales peel off too fast. Sometimes the use of too strong soap will dry the skin and make the hands chap. Suggest that if they do become chapped (or if they are grimy), washing them in warm water with Indian meal and a little white soap, and drying them carefully will help heal them and make them soft and white. Cold cream, vaseline, or glycerine and rose-water rubbed into the hands after washing or before going to bed will help.

Allow the pupils to observe the pores in the palm of the hand through a small magnifying glass. There are just such little holes in the skin all over our bodies. What do we call them? When the weather is very warm or when you have been playing hard or exercising, you often see something on your forehead and hands that comes out of these pores and stands on the skin. What is it? Ask one of the children to place the palm of the

hand flat on the slate blackboard, or on a hand mirror. What are these tiny drops of moisture and where do they come from? Explain that a little perspiration is passing off all the time even in the winter, but that it dries so quickly that one does not usually notice it; that it carries from the body some things that are no longer of use to it, something like the ashes that fall from the grate; and it also helps to cool the body when one is very warm. Should the pores be kept open or allowed to become closed? In what ways may they become stopped up? Emphasize the need of frequent bathing because the pores are so tiny that they easily become closed with the fine dust from the room or the street. Show that if children wish to have nice, clear, beautiful skins they must not neglect to bathe quite often. Review simple directions for bathing.

Warn the children against sitting where the cold air will blow on them when they have been exercising and are perspiring. Explain simply that chilling the body is apt to close the pores of the skin and thus bring on a cold. Why should one not wear rubbers in the house? Give reasons if the children do not know.

CONCLUSION

The skin covers the tender flesh.

Each creature has the kind of a skin that best suits its needs.

The new skin grows a little at a time.

We must bathe very often to keep the pores open.

SOME QUESTIONS OF CONDUCT AND BEHAVIOR

BY NANNIE BYRD TURNER

Wash your hands and faces well,

Willingly and cheerfully,

Make them clean as clean can be

When you hear the dinner bell.

If the kittie cats ran races

When 'twas time to wash their faces,

Mewing that they would not prink—

What would Mother Pussy think?

Put away the sweets and stuff

Till another morning comes—

Chocolates and sugar plums

When dear mother says "Enough."

If the little baby squirrels

Tried to get, with tears and quarrels,

All the nice nuts stored away—

What would Mother Squirrel say?

Say good-night and go to bed

When the busy clock calls "Eight";

Do not fret to stay up late,

Lagging Feet and Nodding Head.

If the little chickens flouted

Sheltering wings, and "peeped" and pouted

All the bedtime hour through—

What would Mother Biddy do?

—*The Designer.*

SIR WILLIAM BROADBENT who was chairman of the Committee of British physicians which, four years ago, inaugurated the great medical petition for compulsory hygiene and temperance instruction in the schools of Great Britain, died in London, June 10. At the time of his death he was physician-in-ordinary to King Edward and the Prince of Wales. In 1898 he was physician extra-ordinary to Queen Victoria. He was twice censor of the Royal College of Physicians of London. The Boston Medical and Surgical Journal says: "He was one of the best representatives of the large, cultivated and learned group of physicians which England has produced."

We regret that this issue of the JOURNAL will not reach our readers quite so promptly as usual on account of unavoidable delays at the printing office.



School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

BEGINNINGS

MORE than for any other one profession, is it true that for the teacher, September is the month of new beginnings. Last year's work was shut away in the records of the past with the closing of the schoolroom door in June. Summer, if wisely spent, has brought new strength, inspiration, and wisdom in anticipation of the daily tasks which, though familiar, can never be quite the same each year. New faces, new dispositions, pupils from widely differing environments and with varied mental powers, present each September a problem as diverse in its aspects as it is fascinating in its solution.

Ideals, too, develop year by year, and the real teacher, as she steps once more upon the throne of her little kingdom, bears with her a vision of what is to be most important in her relations to the often strangely assorted lives before her. The teaching of certain facts must be, but education is more than that; it is that *training* of physical, mental and moral powers which sends the child from the schoolroom to the life of the world, alert, ready, well-balanced, sensitive to social obligations.

To many a child the atmosphere of the schoolroom is the only uplifting element in life. To many this will be the last opportunity for such uplift. Therefore, the teacher with illumined vision includes within it a schoolroom as wholesome and cheery as it is within her power to make it, the example of a healthful, well-poised personality, and the training of her young people through knowledge, suggestion and will to habits of right physical living, of sobriety, of allegiance to high ideals of personal and public honor.

Loyalty to such a vision as this brightens the daily necessary drudgery, and opens the way for those priceless rewards which every earnest teacher sooner or later learns to recognize as the unexpected, unbargained-for, but most precious compensations for her labors.

A POPULAR SUBJECT

HYGIENIC and temperance education has been receiving serious attention at the international congresses this summer. At the International Congress of School Hygiene in England, Prof. G. Sims Woodhead of Cambridge University spoke of the strong convictions held by teachers of the harm worked by tobacco and that alcohol is responsible not only for many of the unfavorable conditions under which many school children suffer, but for the production of objectionable features of our modern life that **interfere** with physical and moral development. Instruction in these subjects, he concluded, "in the hands of teachers might be a most favorable instrument for raising the habits and ideals of the child, the man or woman of the future, without causing it to bring criticism upon the habits and ideals of its elders."

Education was a frequently recurring theme at the Eleventh International Anti-Alcohol Congress held in Stockholm. The first oration following the inaugural proceedings emphasized the necessity of more temperance teaching in the schools. An evening discussion of "The task of the school in the battle against alcoholism" was participated in by speakers from Sweden, Finland, Germany, Austria, and Hungary. In Sweden, the Teachers' Temperance League has become a great force. In the student class every fifth student, and in the gymnasium every fourth pupil is an abstainer. The Swedish Diet has appropriated 25,000 crowns (Swedish) for the temperance instruction of the teachers in the seminaries. The Hungarian deputy to the Congress reported compulsory temperance education in the seminaries of his country. Lessons illustrating methods of teaching the subject, conducted by Mr. Walter N. Edwards of London, are said to have proved one of the most attractive features of the Congress.

The Sunday preceding the opening of the Congress was noteworthy for a great popular demonstration by thousands of members of Swedish temperance organizations who, with ringing cheers, passed several resolutions of which the following was one:

"We claim that proper instruction about the nature and effects of using intoxicants shall be given in all schools, and that the present and future teachers shall have especial education to qualify them for this teaching."

Teachers in continental Europe are uniting in professional organizations to express their adherence to the principles of sobriety. The time is past when to manifest interest in this

subject is to be "queer" or a "crank". Statesmen, physicians, educators, and parents all over the world are becoming one in this movement for the education of the children to health and sobriety as a part of social reform.

THE CIGARET PROBLEM

ONE TEACHER'S PRACTICAL METHODS

THE most of my pupils were boys between the ages of twelve and eighteen.

The very first morning I detected a disagreeable odor which I instantly recognized. A glance at the pale complexion of several told me who were slaves to the cigaret. At recess a number coolly enjoyed a smoke. Of course, the use of tobacco on the school-grounds was immediately and decidedly forbidden.

It had been the privilege of these pupils for years to spend recess and noons at the little store and post-office near by. But, finding that fifteen out of eighteen boys habitually spent their recreation moments using tobacco at the same store (for a few used cigar, pipe, and chewed as well), recesses were denied and only a few minutes taken for rest exercises under my direction.

The requests to leave the room were then more frequent and one at a time was allowed to go. One lad aroused my curiosity by always asking to go at a certain time—10.30 and 2.30—and remaining out some time. I stationed myself near the door and upon his entrance was greeted by the cigaret odor so despised. Soon after, I detained him with others to review some ill-prepared lesson. He remained a few moments and then left suddenly without permission. I saw him go toward home with a cigaret in his mouth.

He was a tall, strongly-built boy of seventeen, but the results of his evil habits were only too apparent in his poor complexion, trembling hand and the passionate temper.

The following morning he entered late. I immediately asked his attention and demanded an explanation of his act of the day before, reparation to be given before the close of the day else he would be denied the benefits of the school. At noon he sought an interview and manfully apologized, saying that the desire for a smoke became so strong that he knew, did he not yield, he would suffer. Then followed a plain talk. He had used tobacco in all forms since a child of eight, and had striven often to give it up, succeeding for a week at the most. He had grown to despise himself. His habit was fast leading to baser ones. He confessed that he often asked to leave the room simply that he might smoke.

Five cigarettes a day seemed absolutely necessary and usually many more were consumed. He suffered from "heart spells" and "throat-trouble," and seemed not to realize the cause.

I began a vigorous crusade. I read them good, short stories at odd times. A few were about the effects of tobacco poison and of efforts to break the habit. I appeared to take it for granted that my wise boys had given it up (they were so sly), and I commended them. Our physiology lessons became intensely interesting. How much we grew to love and long for healthy bodies. We admired those we knew who possessed fine, erect forms. They were not tobacco-users. Oh! the tact needed with those boys of mine!

The storekeeper promised to sell no more tobacco or cigaret papers to them. One of the store-sitters told me he would let me know if any of my flock smoked or chewed when there. He did so. They stopped too, for the quiet little private lectures were not pleasant to take. I was so sorry for them. Perhaps they could not stop doing so! Then how they tried to show they could when they chose. Some succeeded. Others failed pitifully.

Games were introduced at the noon hour which made the school-grounds more interesting than the store. Many found it difficult to keep their attention on their lessons owing to the diseased brain-cells. Many and varied were the methods used to help this. Prizes were offered for excellence in certain studies. The tobacco-users strove hard to show the teacher they could hold their own with the non-tobacco users. It was not possible.

Those who won in the athletic sports were not those addicted to the use of cigarettes, and so we built up a table of interesting statistics from our daily school-life. It gave us food for thought. They began to see that instead of a manly habit, theirs was an unreasonable one and the slave of it deserved pity.

The next year found me at work elsewhere. But I am glad to report that a few have conquered their evil habit and some still keep up the struggle for victory. When one and another come to me, as they occasionally do, with tidings of new victories, giving me thanks, I feel repaid for all that my interest in them led me to do.—*Normal Instructor.*

Dr. T. A. MacNicholl of New York, a delegate from the Scientific Temperance Federation and a government representative to the International Congress, presented several papers on different phases of the alcohol question. His reply to the address of welcome by H. R. H. Prince Gustaf Adolf, of Sweden, will be found on another page.



Grammar Lesson

EIGHTH YEAR

BRAIN AND NERVES

Man is a tool-using animal. Weak in himself, and of small stature, he stands on a basis, at most for the flattest-soled, of some half-square foot, insecurely enough; has to straddle out his legs, lest the very wind supplant him. Feeblest of bipeds! Three quintals are a crushing load for him; the steer of the meadow tosses him aloft like a waste rag.

Nevertheless, he can use Tools, can devise Tools, with these the granite mountain melts into light dust before him; he kneads glowing iron, as if it were soft paste; seas are his smooth highway, winds and fire his unwearied steeds. Nowhere do you find him without Tools; without Tools he is nothing, with Tools he is all, . . . and surely if we consider the interval between the first wooden dibble fashioned by man, and those Liverpool steam carriages, or the British House of Commons, we shall note what progress he has made. He digs up certain black stones from the bosom of the earth, and says to them, "Transport me and this luggage at the rate of five-and-thirty miles an hour," and they do it; he collects, apparently by lot, six hundred and fifty-eight miscellaneous individuals, and says to them, "Make this nation toil for us, bleed for us, hunger and sorrow and sin for us;" and they do it.—Carlyle.

THE foregoing thought-provoking quotation from Carlyle's "Sartor Resartus" may be placed upon the blackboard a day or two before the class in physiology is to take up the study of the brain and nerves. If, as is likely to be the case, most of the members of the class are studying English, it may be used as a basis of a theme dealing with the points of the weakness of man as compared to that of the animals. Consider the wonders of his achievements by means of tools, and, back of the tools, man himself, using his brain and nerves as but another tool, a tool not only capable of producing mechanical results such as the transportation by "black stones," but showing also the highest forms of mental capacity, judgment, reason, and morals as illustrated by the House of Commons. If it is not desirable to have the written work, the quotation may be discussed in class and then the subject taken up under the following heads:

- I. The results accomplished by the use of brain and nerve tools.
- II. Structure and operation of the tools.
- III. The care of the tools:
 1. To keep them in good working order.
 2. To bring them up to the highest degree of efficiency.
 3. To keep them from harmful influences.

RESULTS ACCOMPLISHED BY MEANS OF THE TOOLS

Lead the class to speak first of some great engineering and architectural feats such as Brooklyn Bridge, Simplon Tunnel, Pyramids, Cologne Cathedral; of great telescopes with which the starry wastes are pierced, or of great transportation systems, etc., which man, using his tool, the brain, has conceived and constructed. Then speak of fine manipulative skill such as that required by piano and violin players, makers of watches and optical instruments, telegraph operators and composers, or of the wonderful tactile sense which enables experts in the government offices at Washington to pass thousands of bills through their hands in a single day and to detect any counterfeits with unerring accuracy. Speak of the masterpieces of literature, music, art, monuments to man's genius, also of the great achievements of statesmen, reformers, and empire builders.

Turning from what these tools accomplish outside the body, consider the things they help accomplish within it. After a general discussion of the work of the brain and nerves, assign such topics as the following to different members of the class:

The control of the muscles by the nerves; of the heart and blood vessels; of the respiratory organs; of digestion and assimilation; of body heat; of sight; of hearing; of smell; of taste; of feeling.

Let each one report how the nerve tools serve in the particular case mentioned and show how indispensable each is to man's life or activity.

THE STRUCTURE AND OPERATIONS OF THE TOOLS

Note the relative simplicity in structure of the brain and nerves as compared with the wonderful and complex work performed by them. So far from being wonderfully complex in appearance, at least, it is, as Steele says, "surprising to have revealed to us only cells and fibers. The brain is the least solid and most unsubstantial looking organ in the body. Eighty per cent of water, seven per cent of albumen, some fat and a few minor

substances constitute the instrument which rules the world."

The structure and functions of the brain and nerves are fully treated in all text-books. They may be taken up by the class by the topical method under the general headings: (1) nerve cells and nerve fibers; (2) the cerebro-spinal system; (3) the sympathetic or ganglionic system. Discuss the structure of the parts of each. Make clear their special functions, their structural adaptation to function and the interrelation of parts. All pupils should be required to make drawings showing the general form and arrangement of the parts of the cerebro-spinal and of the ganglionic systems. Diagrams

illustrating the functions of the different parts, as for instance, the direction of nerve impulses involved in touching a very hot object and withdrawing the hand, will help fix in the pupils' minds the office of each part.

In studying the *cerebrum*, half an English walnut, carefully removed from the shell, will help illustrate the general arrangement of the cerebrum. The shell may be said to correspond to the skull; its tough brown lining to the *dura mater*; the brown skin on the meat to the gray matter; the white meat, to the white matter.

Compare the convolutions of the cerebrum with those of the frog, the bird, the monkey, the savage. Pictures of these are easily obtainable if the text-books in use do not show them. Point out the connection between the number and depth of convolutions of the brain and the brain power of the individual.

Have placed upon the blackboard or on a manilla paper chart a sketch showing the location of a few leading centers of the cerebrum, such as those of the faculty of speech, of sight, word-forming, etc.

Tell the story of the German army officer who, being thrown from his horse during a military parade, fell, striking his head on the stone pavement. He returned to con-

sciousness but was unable to speak a single articulate word. Upon examination of his brain it was found that the trouble was due to an injury to the speech center itself. A small portion of the skull being removed, a little hardened clot of blood was found directly over it. This was carefully removed, and in three weeks the patient's ability to speak was fully restored. Show that similar injuries to other centers have produced similar results thus proving that different parts of the brain have specific duties.

Compare the *cerebellum* with the cerebrum, in size, shape, appearance and function (in size, about half as large as a baseball; somewhat flattened and much furrowed; darker in color than the cerebrum; weight about 5 ounces.)

Spinal Cord. To illustrate the structure of the spinal cord procure a small fresh section of a beef's cord and have also a portion which has been previously hardened (by being soaked for some time in a mixture of one quarter of an ounce of bichromate of potash and one ounce of a 40 per cent solution of formalin in one quart of water) so that it can be cut off in thin slices. Note the size, the deep fissures dividing it into lobes, the minute central opening, the gray matter inside (not outside as in the brain), and the mass of white matter



"Opportunity plays an anvil chorus on every door."

enveloping it. Examine under a glass and observe the ends of the nerves composing it.

In studying the *ganglionic system*, bring out the differences in the size of the ganglia which varies from that of a speck to that of a size of a grain of wheat or even of a bean. What is the network of a number of ganglia called? (plexus). Why is a "blow below the belt" so dangerous?

NOTE—The consideration of the following topic combined with that treating of the influences which detract from mental efficiency may well be made the subject of an entire lesson, furnishing excellent work for classes in English if time for the physiology lesson is limited. For suggestions in habit culture see p. 4, also chapter on "Habit" in James' Psychology.

CARE OF THE TOOLS

Since the brain and nerve tools are at once the most necessary, the most delicate, and the least capable of repairs when once they are seriously impaired (it is said that nerve tissue once destroyed can not be restored), impress the class (1) with the need of keeping these in the best working order; (2) with the desirability of developing them so as to secure the highest degree of efficiency possible to the individual; and, (3) of protecting them from all harmful practices or indulgences.

1. **TO KEEP THEM IN THE BEST WORKING ORDER.**—Bring to the class two fine edged tools one in good condition, the other slightly nicked. If possible, let one or more members of the class use the tools comparing their efficiency. Bring out the fact that the tool is made up of millions of atoms and that the destruction of a comparatively small number has impaired or destroyed the usefulness of the tool. Compare with the brain tool made up of millions of nerve-cells (one author says there are 9,000,000,000). Recall that each little nerve fiber and center has its own work to do. What then may be the effect on the efficiency of the nervous system if even a few cells are destroyed or weakened. Show that nervous integrity depends (a) upon proper nourishment, (b) sufficient rest, and, (c) upon recreation.

Good Food and Fresh Air. Recall the familiar fact that the life, activity and repair of every cell in the body depend upon a sufficient supply of proper food and oxygen. Good food and fresh air are, therefore, first essentials. What classes of food would best conserve nervous energy? How can a brisk walk help one to master a difficult lesson?

Rest and Sleep. Compare pictures of perfect nerve cells and their fibers with those which have become exhausted by mental labor. In what ways can the latter be restored? Lead the class to see that since the mind can never cease its work during consciousness, the only time when these cells can really be restored is during sleep. What part of the night is most useful for this purpose? Discuss the reasons for sleeping at regular hours and in the night rather than in the morning or day. Speak of the fact that the nervous system does not quite get back at night what it has lost during the day. What, then, is the physical reason for one day of rest in seven?

Recreation or Re-creation. Why is it so much more fatiguing to use a single group of muscles all day than to vary the

work so that different sets are successively called into play? Similarly, why do we study several subjects each day rather than arithmetic all Monday, language all Tuesday, physiology all Wednesday, etc.? Why do many women living on the prairie remote from neighbors become insane? Show that a change of occupation and interest is advantageous because (1) one group of nerves recreates itself while another is active, and (2) a change diverts the mind from a dead level of sameness, brings other faculties into play and so refreshes and invigorates. Impress the class with the idea that entire idleness—stagnation—is seldom re-creation.

2. **TO BRING THE TOOLS TO THE HIGHEST DEGREE OF EFFICIENCY.**—If convenient show a piece of iron ore, one of pig or cast iron, a finely tempered tool, and the hair spring of a watch. Discuss briefly the evolution of the products manufactured from the crude ore, bringing out the idea that it is simply a matter of treatment whether a mass of ore yields the cheapest pig iron or hair springs worth their weight in gold.

Training. Compare the brain of the child to the mass of ore and show that here, too, it is largely a matter of education and development whether one has crude mental ability or a powerful trained intellect. Just here is the place to encourage and inspire the ordinary or dull pupils who are apt to feel that the mediocrity of their mental equipment limits them to mediocrity of attainment. Show them that the iron ore which was capable of producing hair springs, made only pig iron when development was stopped at that stage in the manufacturing process. To have gone another step would have been to make a good tool, or further yet, the valuable watch spring. Ordinary brain power may rival if not exceed talent, if persevering diligence, application and concentration develop it to its utmost limit, the bounds of which are set only by serious illness or death itself. "Genius is an immense capacity for taking pains."

The secret of great achievement is development through education, and "the forming of habits is nature's method of education."

Habit. Discuss the power of ordinary habits. How many have tried to break habits such as tardiness or using slang? How many have known of men or boys who have tried to break off using tobacco, cigars or perhaps alcoholic drinks? What did their efforts, often unsuccessful, prove regarding the hold habits have on us? Which is easier, to bend a twig or to straighten a crook in a tree?

Call the attention of the class to some familiar foot path through the fields and ask how it was formed. Bring out the facts that the first time anyone passed through, there was little except a few bent blades of grass to show that busy feet had passed that way, but as people continued to walk across the field, the grass and soil were worn down till now every one going that way instinctively takes the path.

How does any new nerve impulse pick its way through the brain? Show that the next time that impulse passes, it travels over the route that the first one took and as each succeeding one passes, the tiny path is made deeper till a brain path is made or, in other words, a habit is formed, frequently, as Professor James tells us, in six weeks.

When is the brain in its most plastic stage? In what way is the saying true "The child's brain is wax to receive and granite to retain?" Show that habits of study, thought, and concentration on the work in hand, of determination to look on the bright side of life, and of self-control in all things, will lay the foundation for the highest intellectual efficiency, for happiness, and for moral stamina in after life. Inattention to one's work, unkind and gloomy thoughts, and saying "yes" to temptations, even if insignificant in themselves, make it well nigh impossible for one to develop a sunny temper and a strong mental and moral nature. It must not be forgotten that as in youth it is easy to form good habits, it is also easy to break bad ones. The former will fight for us, the latter against us, as long as we live.

3. TO KEEP THE TOOLS FROM HARMFUL INFLUENCES.—What treatment does a careful workman give his finely-tempered steel tools? Why did a man who had a valuable watch say that he would be as willing to have the timepiece thrown on the floor as to have a person breathe once upon the works? Speak of the corroding action of powerful acids on steel. Show that fine and almost impalpable as nerve substance is, various influences may, nevertheless, affect it in ways not unlike those by which tools may be injured.

Fatigue. Explain simply to the class that it is now known that fatigue comes when one has been working brain or muscle hard because the waste poisons can not be thrown off by the body as fast as they are made. As they accumulate, they irritate the nerves till we become so tired we must stop until we are rested, that is, until the waste toxins are disposed of.

Power of Mind Upon Body. Scientists tell us that worry, jealousy, anger and other

evil passions actually produce acid poisons in the body which always injure the nerves and brain according to the extent to which they are indulged, while, on the other hand love, cheerfulness, and belief in the triumph of good, exhilarate and build up nervous energy. Lead the class to see that the child who will determine to have a clear conscience and to be cheerful and happy whatever comes, and who consistently abides by that decision, is likely to live longer than the one who must feel remorseful because of wrong-doing or who allows the habit of gloomy thoughts and unhappy forebodings to become fixed.

Drugs. Far more insidious and damaging than any toxins of extreme fatigue, and passion are the corrosive effects of certain drugs, and the conscientious teacher will earnestly press home the facts of the dangerous nature of those narcotic poisons which exert their first and most injurious effects on these tissues which are the most delicate.

Discuss with the class the exact meaning of the word narcotic. Distinguish clearly between narcotics and stimulants, pointing out the fact that a true stimulant is not followed by a nervous reaction while a narcotic is invariably so followed. (See article "Alcohol a Narcotic—Not a Stimulant," June JOURNAL.) The class of narcotic poisons includes not only opium in its various forms, but also alcohol, tobacco, chloral, cocaine and hasheesh. Discuss the origin, nature, and peculiar effects of each.

Show (1) that the first effects of most, if not all, narcotics is one of apparent stimulation due to their paralyzing effects upon the higher nervous centers; (2) that steadily increasing amounts are required to produce the same effect; (3) that during this stage of excitation those who use the narcotics are deceived into thinking they are doing more and better work, when, as a matter of fact, they are doing less work and of a poorer quality; (4) that, beginning with the highest psychical centers such as those controlling the will, emotions, and reason, and proceeding to the least sensitive nerves, the corroding and paralyzing effect of the narcotic is everywhere present, all suffer according to the amount and kind of the poison taken; (5) that as Kraepelin, Fick and other great physiologists have demonstrated, the presence of alcohol in the blood in amounts as small as $\frac{1}{2}$ volume in a thousand volumes "causes a very decided disturbance in the action of the nervous system," effects which are cumulative where the doses are repeated; and (6) the danger of habit-forming in the case of the continued use of even small quantities of any of these

narcotics, a danger Prof. von Gruber portrays in the following vivid picture:

"No one can foretell whether or not he is susceptible to alcohol. He finds out only by playing a game of chance with his life which is a dangerous experiment."

REFERENCES

When the higher powers of the mind, i. e. those involving association of ideas and the formation of judgments, were called into play, Kraepelin found that there was no real quickening of brain activity under alcohol, but that its slowing effect began from the first and continued throughout.—SIR VICTOR HORSLEY and DR. MARY STURGE.

It is important to point out that nervous debility—or the sense of it—is frequently caused and accentuated by the moderate use of alcohol. Much of the nervous exhaustion of the present day would cease to exist were alcohol eliminated from the dietary of the people.—SIR VICTOR HORSLEY and DR. MARY STURGE.

The capital argument against alcohol, that which must eventually condemn its use, is this, that it takes away the reserve control, the power of mastership, and, therefore, offends against the splendid pride in himself or herself which is fundamental in every man or woman worth anything.—WALT WHITMAN.

ERNST RUDIN found that single doses of alcohol may continue to show their effects for 24 hours or longer, and that the influence of alcohol consists, in general, of a slowing of the process of adding, making memorizing more difficult, shortening but increasing the errors in reaction time, and an increase in the associations of ideas expressed in speech. With some subjects this was the only result noticed.



The effect of the use of tobacco on growing boys, is evil and evil only. To assist in checking the growth of the habit among the boys of the high school, it seems to me it would be legitimate and proper to shut out from any part in school athletics such boys as were known to use tobacco in any way and to require the abstention from tobacco as the first condition to admission upon any team. Whether the school might not properly go further and refuse every boy known to use tobacco any place of honor within the gift of the school is, at least, an open question.—ISAAC THOMAS, Prin. High School, Burlington, Vt.

FACT AND THEORY

SIR Victor Horsley and Dr. Sturge have supplied what those interested in the alcohol problem have been eagerly awaiting, a comprehensive, scientific treatment of alcohol as a drug in its relation to the human body, authentic, authoritative, and up-to-date*. The logical scheme of treatment which will be found in another column bids for confidence at the start.

Besides the rank of the authors, the mark by which one may usually tell a genuine scientific work from such shams as are being circulated in the interests of the liquor trade is the clear, plain demonstration of the assertions put forth. The alcohol advocate dodges evidence and masses his strength on argument. In this book, we have a plain, simple presentation of facts, brief physiological explanations where necessary, and proof,—the unequivocating photograph, the mathematical diagram, the data of the original investigator, the tables of the statisticians.

As one of the exhibitors of this evidence, we have a titled physician who has won an honored place in his profession, and whose attitude toward his subject is best presented in his own words. He says:

"Looked at from a purely scientific standpoint, the question of the effect of alcohol is one of fact alone, and not even the tragedies and the poverty which result from its habitual use can prejudice its consideration. Therefore, though all scientific subjects have a grave socio-political and national importance, and none more markedly so than that of alcohol, we propose in this little volume to put forward the present state of knowledge of alcohol solely on the basis of experimental, anatomical, and statistical evidence."

The book should be on every teacher's desk, in every school and public library, at the elbow of every clergyman and social reformer. Its future place will undoubtedly be that of a standard text-book on the alcohol question.

A WORK of somewhat different character will be found in *The Drink Problem*,** in which fifteen British authors are given opportunity to speak to the public, each on his own responsibility, concerning the alcohol question. The editor, carefully refraining from

*ALCOHOL AND THE HUMAN BODY, by Sir Victor Horsley, Professor of Pathology in University College, London, and Mary D. Sturge, M. D., Physician to the Birmingham and Midland Hospital for Women. London and New York. MacMillan & Company.

**THE DRINK PROBLEM, by fourteen medical authorities, edited by T. N. Kelsoack, M. D., M. R. C. P., E. P. Dutton & Company, New York.

any grounds for prejudgment, introduces their views impartially.

The standpoints of the writers vary all the way from that of theory and of the "physiological interpretation of the mental manifestations," to that of historical, experimental, and clinical facts. We find the theorist elaborating the old idea that the great antiquity and universality of alcoholic indulgence "suggest a possible instinctive need." This might also be said of war or of slavery.

Again, the theorist speaks of "abundant opportunity to drink" as having evolved "a type of individuals indifferent to its allurements." Is this result due to opportunity to drink, or to the labors of such men as Father Matthew, Sir B. W. Richardson, Lyman Beecher, John B. Gough, August Forel, and hosts of other consecrated souls who have de-

ly valuable portions of the book. He will find a contribution from Prof. G. Sims Woodhead, on "The pathology of alcoholism" that follows the microscope down among the tissues and flashes back pictures of what alcohol there produces. A chapter on "Alcoholism and mental diseases," by Dr. T. B. Hyslop will startle him with indications that the Anglo-Saxon (in England at least) "is drawing near to the summit of his intellectual attainment." A chapter on "Alcohol and public health" by Dr. Arthur Newholme, shows that alcoholism is "a chief cause of national inefficiency." Toward the end is a hope-reviving chapter on "The teaching of temperance" by Sir E. Claude Taylor, showing the growth and support of this prophylactic method, and affirming that "the teacher should place alcohol in its proper category as a poison



"Over the hills and over the meadows,
Over the elm where the waters meet,
Autumn is trailing her long brown shadows,
And bronzing the tips of the grasses sweet."

voted their lives and energies to helping men see the dangers and absurdities of drink?

One writer suggests that this "ability to tolerate alcohol has evolved through the elimination of those who are highly vulnerable to its action." Further on, he naively remarks that "Whether this *a priori* argument is borne out *a posteriori*" he shall not stop to consider. The reader, however, is liable to stop to consider when he find another writer saying, "So intolerant are we of the present generation to the effects of alcohol, that were we to emulate the example of the four-bottle men of old we should soon find ourselves within the four walls of an asylum."

By reading the book, pencil in hand, and making cross references, the reader may, with some labor, discover where theory clashes with fact, and decide for himself what are the real-

and distinguish it from nutritious and wholesome foods."

Thus, one who is prepared to be his own editor can find good things in the book. One of the best is, "A narcotic possessing the possibilities of initiating habits and methods of life which may be productive of infinite evil, should never be self-administered."

The Illinois State Course of Study, just revised, has been officially adopted by seven states and territories and by counties in many others. Its course in Physiology embodies practically the entire International Course of Study in Physiology prepared by the late Mrs. Hunt and recommended by a Representative Committee of 15,000 physicians for use in the common schools of Great Britain.

SOME IMPORTANT RECENT
EXPERIMENTS

STUDIES IN EXPERIMENTAL ALCOHOLISM, by Reid Hunt, Ph. D., M. D., Chief of the Division of Pharmacology, U. S. Hygienic Laboratory, Treasury Department, Washington; Hygienic Laboratory Bulletin No. 33.

Light on three important questions connected with the physiological action of alcohol is furnished by these recent experiments of Dr. Reid Hunt.

1. The cause of the oft-noted tolerance toward alcohol possessed or acquired by some individuals appears to lie in an increased power of oxidizing alcohol, due to profound changes in physiological processes which greatly increase susceptibility toward certain other poisons. Doses of alcohol given in these experiments which were too small to cause the slightest indications of intoxication, or loss of weight, or any discernable structural injury, reduced the amount of acetonitrile necessary to produce death from one-half to one-third. Here would appear to be a clue to the moderate drinker's inability to withstand even mild attacks of many diseases, especially infectious ones. "Increased susceptibility," Dr. Hunt thinks, is a more correct term than "lowered resistance" to apply to this state.

2. The action of alcohol upon an animal's susceptibility to certain other poisons, in this case acetonitrile,* is entirely contrary to the action of carbo-hydrate foods, dextrose in particular. Mice fed upon oats soaked in solution of dextrose, or upon rice, could resist two or even three times the dose fatal to controls; while the mice receiving alcohol died from doses one-third to one-half less than the amount that killed the normal animals.

The amount of ethereal sulphates in the urine of rabbits receiving three grams of alcohol per kilo of body weight, rose from eight or nine milligrams to about twenty-five milligrams. Increase in ethereal sulphates is usually taken to mean increased intestinal putrefaction, a condition which, in turn, has been credited with playing a part in the production of various diseases, alcohol-tobacco amblyopia, forms of headache and neurasthenia, and cirrhosis of the liver. "A systematic study of the excretion of ethereal sulphates, phenol, etc.," the author suggests, "in cases of alcoholism in man, would probably yield interesting results."

With good reason the author modestly

*"Acetonitrile (CH CN) or methyl cyanide. It is almost certain that its physiological action [poisonous effect] is due to the slow liberation of hydro-cyanic acid in the body."

claims that, so far as he is aware, "this is the first series of experiments in which distinct physiological changes have been found to result from what may be called the strictly moderate use of alcohol." He has shown "*profound modifications of certain physiological processes to result in a comparatively short time from doses of alcohol so small that indications of intoxication never occurred.*"

Besides opening up new and promising lines for further investigations, Dr. Hunt's work furnishes valuable material to students of alcohol literature who have been expecting and still expect science to produce more and more of such "clear experimental evidence for the view that extremely moderate amounts of alcohol may cause distinct changes in certain physiological functions and that these changes may, under certain circumstances, be injurious to the body."



AMERICA'S RESPONSE

DR. MACNICHOLL'S GREETING FROM THE
WESTERN WORLD

In response to the invitation of His Majesty, the King of Sweden, Dr. Crothers, Dr. Ellsworth and myself have been appointed delegates to this Congress.

We bring greetings from a government which is in sympathy with the sentiment expressed by Thorild, "To think free is grand but to think right is grander." We bring greetings from a people whose purse is ever open in the interests of humanity and whose hand is ever extended in fraternal good-will to the people of every land. We bring greetings from a nation whose laboratories for scientific research, whose institutions for the cure of inebriety, and whose scientific temperance instruction in the public schools have done herculean work in the cause of true temperance.

We bring greetings from the American Medical Society for the Study of Alcohol and other Narcotics an association devoted to scientific research, and representative of the truth-searching American physician.

We bring greetings from the National Scientific Temperance Federation which is endeavoring to perpetuate the work of that distinguished woman, Mary H. Hunt, to whose indefatigable labors, more than to any other cause, we are indebted for those laws which make obligatory scientific temperance instruction in our public schools.

To the Eleventh International Congress for the Prevention of Alcoholism, and to the nation whose guests we are,—Greeting!

**Publications received and indexed for reference by Scientific
Temperance Federation**

- ARTMAN, SAMUEL R.—Liquor Licenses Un-constitutional.
- ALLEN, MRS. MARTHA M.—Fake Patent Medicine Testimonials, Percentages of Alcohol in Patent Medicines, Proprietary Foods and Malt Extracts, Danger and Harmfulness of Patent Medicines, A Study of Patent Medicines, Alcohol and Nursing Mothers.
- BUNGE, PROF. G., M. D.—Alcoholic Poisoning and Degeneration.
- CONNOLLY, JOHN M., M. D.—Alcohol as a Stimulant.
- CROTHERS, T. D., M. D.—The Insanity of Inebriety, Some Questions of the Legal Responsibility of Inebriates.
- ECCLES, W. MCADAM—Alcohol in the Light of Modern Science.
- HALL G. STANLEY—Aspects of Child Life and Education.
- HOLITSCHER, A., M. D.—Nursing Ability and the Results of Prof. Bunge's Investigation, The Intoxication of the Murderer Galtbiersch and His Condemnation to Death, Consensus of Opinion Concerning the Scientific Justification of the use of Wine and Beer. By Professors Aschaffenburg, Gruber, Grutzner, Kassowitz, and Krapelin.
- HUNT, REID, M. D., PH. D.—Studies in Experimental Alcoholism.
- INTERNATIONAL ANTI-ALCOHOL CONGRESS, Tenth Report of.
- JEFFERSON, C. E.—How Cities and Towns can be Carried for No License.
- KASSOWITZ, DR. MAX.—Give no Alcohol to Children, Tolerance of Poisons, How I Became an Abstainer, The Nutritive Value of Alcohol, Is the Action of Alcohol Nourishing or Poisonous?
- KELYNACK T. N., M. D.—The Drink Problem and Its Medico-Sociological Aspects.
- KOETTLITZ, DR. H.—Concerning Alcohol a Food and Alcohol a Poison.
- LUERSSEN, ARTHUR, M. D.—The Practising Physician and the Battle Against Alcoholism.
- LYMAN, ARTHUR—The Liquor Law.
- MACNICHOLL, T. ALEXANDER, M. D.—Does Alcohol Sustain Life?, Alcohol and Disabilities of School Children.
- LEWIS, J. B.—Disbursement of Money Received from Liquor Licenses.
- MEINERT & MAYER—Dr. Starcke and his Book.
- PETERSON, J.—Science Concerning Alcohol.
- PODSTAT, VACLAV H., M. D.—Alcohol as it Affects the Brain and Nerve Tissues.
- REPORT OF THE COMMITTEE ON MEDICAL LEGISLATION, Am. Med. Assn. (Canteen).

(Continued next month). ♣

The Latest Authoritative Book on the Alcohol Question

ALCOHOL AND THE HUMAN BODY

— BY —

**Sir Victor Horsley, Hon. M. D., Halle, etc.,
Professor Pathology in University
College, London.**

and

**Mary D. Sturge, M. D., Physician to the
Birmingham & Midland Hospital
for Women.**

PARTIAL CONTENTS—Alcohol a Drug; Effect of Alcohol on Intellectual Processes; on the Emotions; on the Neuro-Muscular System; Degeneration and Disease of the Nervous System Due to Alcohol; Action of Alcohol on the Digestive System; Is Alcohol a Food; Effect of Alcohol Upon the Heart and Circulation; on Metabolism and Power to Resist Disease; upon Children; upon the Race. (See Journal p. 14).

**ABSORBINGLY INTERESTING SCIENTIFICALLY ACCURATE AND UP-TO-DATE
INDISPENSIBLE TO EDUCATORS AND SOCIAL STUDENTS**

16 CHAPTERS

370 PAGES

16 BEAUTIFUL PLATES

21 DIAGRAMS

PRICE, \$1.50 Postage, \$.15

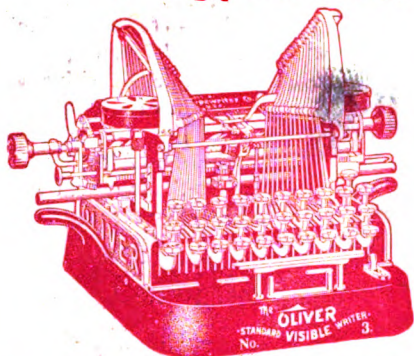
SPECIAL OFFER

Alcohol and Human Body	\$1.50	{	ALCOHOL AND THE HUMAN BODY with SCHOOL PHYSIOLOGY JOURNAL ONLY \$1.80 POSTPAID
Postage	.15		
Journal, one year	.60		

— ADDRESS —

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

The OLIVER Typewriter



The Standard Visible Writer
Universal Keyboard
WINNER OF AWARDS EVERYWHERE.
Art catalogue free. Ask for it.

The Oliver Typewriter Company
69-71 Federal Street, Boston, Massachusetts

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.
\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

School Physiology Journal Club Offers

Every group must contain the SCHOOL PHYSIOLOGY JOURNAL. Magazines may be sent to different addresses. Subscriptions may be new or renewals. Many more combinations for the asking.

FAMILY GROUPS.

World's Work, ‡	\$3.00	} OUR PRICE \$3.25
McClure's, ‡	1.00	
Delineator, ‡	1.00	
School Physiology Journal, . . . . .	.60

Review of Reviews,	\$3.00	} OUR PRICE \$3.10
Woman's Home Companion,	1.00	
Success,	1.00	
School Physiology Journal, . . . . .	.60

Review of Reviews,		} OUR PRICE \$3.75
Any two of Class A,		
Any one of Class B,		
School Physiology Journal,		

TEACHER'S GROUPS.

Normal Instructor,	\$.75	} OUR PRICE \$1.00
School Physiology Journal,60	

Normal Instructor,	\$.75	} OUR PRICE \$1.65
Primary Plans,	1.00	
School Physiology Journal, . . . . .	.60

‡ Single subscriptions for full price only.

YOUNG FOLKS' GROUPS.

Little Chronicle,	1.50	} OUR PRICE \$2.60
Or American (Leslie's),	1.00	
American Boy,	1.00	
Our Little Folks (new),	1.00	
Or Success,	1.00	
School Physiology Journal,60	

CLASS A.

Success,	1.00	} Any 1 with JOURNAL \$1.10
Woman's Home Companion,	1.00	
American (Leslie's),	1.00	} Any 2 with JOURNAL \$1.80
Our Little Folks, (new)	1.00	
American Motherhood,	1.00	} Any 3 with JOURNAL \$2.50
Primary Plans,	1.00	
American Boy,	1.00	

CLASS B.

C. E. World,	\$1.50	} Either with JOURNAL \$1.70
Suburban Life,	\$1.50	
Little Chronicle,	1.50	

‡ This combination cannot be changed.

Anti-Cigarette Helps.

Timely booklets on a timely topic. Teachers! Parents! Do you know what can be said against the tobacco habit? These pamphlets will tell you.

Power of the Tobacco Habit, \$.20. The Cigaretist, \$.05. Boy and the Cigaret, \$.05. Cigarettes and Tobacco, \$.05.
Why the Cigaret is Especially Harmful, \$.02. The Cigaret and the Schoolboy, \$.01.
Samples of each, \$.50. International Course of Study, \$.05. Samples of Anti-Alcohol Leaflets, \$.10.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Social Service in the Temperance Reformation

The Fallacy of the Occident

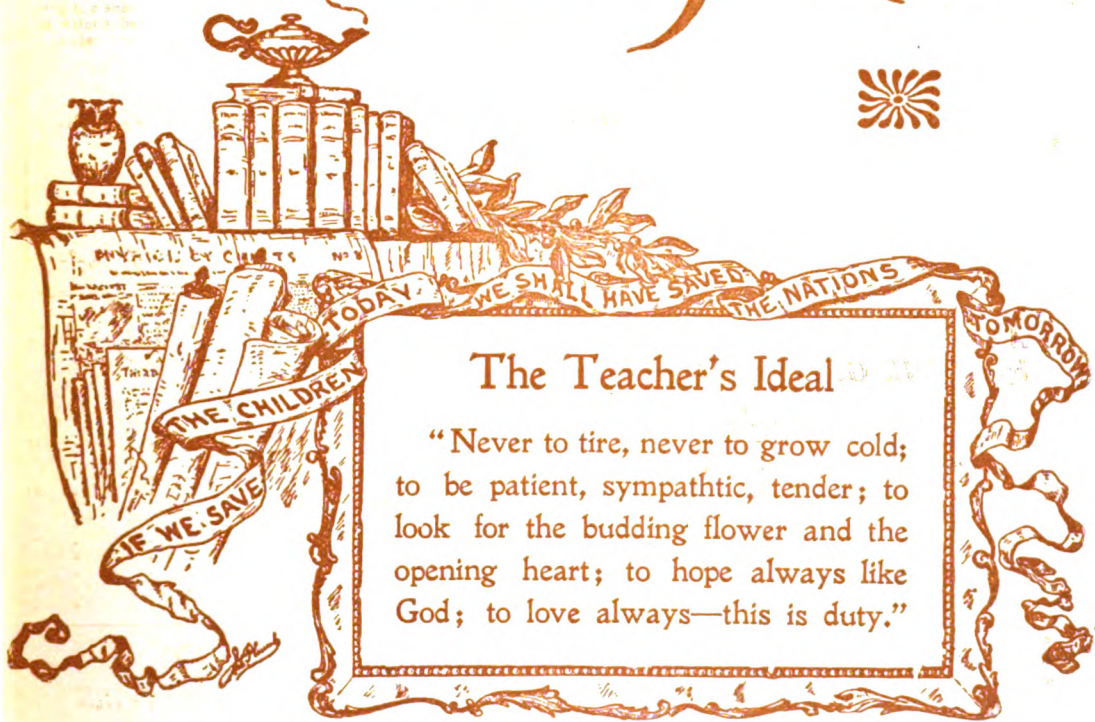
: : : : :

Rec'd by, M. D., F. R. S.
Boston Public Lib

Rec'd
OCT 28 1907
B.P.L.



THE SCHOOL PHYSIOLOGY JOURNAL



The Teacher's Ideal

"Never to tire, never to grow cold;
to be patient, sympathetic, tender; to
look for the budding flower and the
opening heart; to hope always like
God; to love always—this is duty."

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid, to any address on request.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

A New Supplementary Reader
by FRANK G. CARPENTER

Carpenter's How The World Is Fed

60 CENTS

THIS is the first of a new series of supplementary readers, written by the author of the phenomenally successful Geographical Readers. The book gives children a knowledge of the production and preparation of foods, and shows how civilization and commerce grew from man's need of foods and the exchange of foods between the various nations. The author takes the children on personally conducted tours to the great food centers of the world, to the markets of exchange, to the factories, the farms, the forests, and the seas. Together they go to the wheat fields, the flour mills, the cattle ranches, and the packing houses. They learn to understand the manufacture of dairy products, and visit the fisheries, the orchards and vineyards, and the tea, coffee, rice, and sugar plantations. The volume is as interesting as any story book, and is profusely and attractively illustrated from photographs.

American Book Company

New York Cincinnati Chicago Boston

• CONTENTS •

	PAGE
Social Service in the Temperance Reformation	17
Fallacy of the Occident	21
Boundaries of Personal Liberty	23
Side-Lights on Respiration	23
Primary Lesson—The Teeth	24
Japanese Legend	24
Why He Never Became a Banker	25
Editorials	25
The Note of the Hoot-Owl	26
Grammar Lesson—The Home	28
Book Notices	32

THE SUFFOLK ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

284 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

THE SCHOOL PHYSIOLOGY JOURNAL, (10th year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "State Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL,

23 TRULL STREET,

BOSTON, MASS.

School Physiology Journal

Vol. XVII

BOSTON, OCTOBER 1907

No. 2

"Nor knowest thou what argument
Thy life to thy neighbor's creed
has lent,



All are needed by each one
Nothing is good or fair alone."

SOCIAL SERVICE IN THE TEMPERANCE REFORMATION

BY CORA FRANCES STODDARD

Corresponding Secretary of the Scientific Temperance Federation, Boston

A HASTY review of the contents of the leading American periodicals of the last three months reveals more than fifty serious articles on questions of social relations and responsibilities. They touch almost every phase of human existence, but all approach it from the standpoint of the essential oneness of mankind.

It is no longer sufficient that a man be physically, mentally, and morally sound for his own sake; or that he have his political and material rights for his personal comfort and advancement. The progress of one is so interlaced with that of all, that work for social uplift begun in compassion becomes a measure of self-protection and for the advancement of all society. The giving of life for one's fellow-man is the finding of life for humanity. It is this which is the essential principle in all social movements whether they have as their object the removal or the amelioration of evil conditions.

THE BREADTH OF SOCIAL SERVICE

The field of social effort is as wide as the sorrows and failings of all humanity. "Social workers" are not in a select class by themselves. There are specialists in this as in any other field of activity, but the man who insists on renting only healthful tenements, who guards the health and safety of his employees; the teacher who trains her pupils to noble ideals, healthful habits and intelligent abstinence from narcotics; the mother who rears her boys and girls to a high sense of the purity and sanctity of the home, are as truly engaged in social service as the man who builds a public library, endows a

people's palace or hospital, or lives in a social settlement in the slums.

The question is not, therefore, whether any special work for one's fellow-men is a part of social endeavor. It is rather, what is the relation of that work to the whole movement of social uplift? The settlement worker may not say to the temperance worker, "I have no need of thee." The temperance worker may not say to the advocate of tenement house reform or of domestic science, "I have no need of thee". All are necessary to one another. Each sees with special clearness a side of social truth. Hence each may learn of the other.

THE RIGHT PERSPECTIVE

Recognition of this fact in relation to what is popularly termed "temperance work" is of peculiar importance, both from the standpoint of those engaged in it and from that of other social workers. Too long there has been a tendency to isolate this, and to regard it as something distinct from other social efforts, its advocacy a mere indication of "crankiness" and of a desire to press personal prejudices upon the world at large. This is both unreasonable and contrary to the spirit of social science, and it is quite time that this work should be given as a matter of course its proper rightfully dignified place as a branch of social endeavor.

What, then, is the place of temperance work in social uplift?

No one claims, of course, that the elimination of alcohol and other narcotics would solve all social problems. But the relation is far more fundamental than is often recog-

nized. Many a social worker toiling heroically at his relief or preventive measures, might well face squarely the facts of the violation of social laws by drink and other narcotics and their bearings upon his special problem, for the use of these substances has an intimate relation to three purposes with which society concerns itself—self-preservation, happiness, and efficiency.

SOCIAL WRONGS AGAINST THE STRENGTH OF YOUTH

We have learned by long, painful experience that the motive powers of civilization are those elements that make the perfect man. The race, if it is to be preserved from physical degeneracy, can not be propagated from the poorest conditions, and high moral ideals are the "spiritual police" which safeguard civilization in its perilous progress. Whatever tends to lower these ideals or to impair physical perfection must therefore be combated by society in self-protection.

A delegate from the Christian Democrats said recently at a meeting in Belgium for founding an organization to work against alcohol, "Society has the right to protect itself against the excesses of certain of its members and to protect these unfortunates against themselves. The struggle against alcohol is a defensive movement and a work for solidarity". A British Royal Commission has pronounced the use of alcohol one of the most potent causes of physical deterioration. Careful experiments and observations of the scientists are proving that the descendants of alcohol-users are less likely to live, a greater proportion are weak physically and mentally, and not only threaten the integrity of the race, but are themselves liable to become dependent upon state or private charity.

The report of the Massachusetts State Board of Insanity for 1906 showed that of the admissions to public insane hospitals during the year, alcohol was a factor in 21.66 per cent. If the same percentage holds for other inmates of the asylums, in the one state of Massachusetts, there are 2190 insane persons whose condition is due, at least in part, to alcohol. Their support cost the state in one year \$660,000. The superintendent of an Illinois insane hospital recently stated that there are nearly 2,000 epileptics in the public institutions of that state "who could, if they knew enough, point their fingers at one or both of their parents and say, 'You are responsible for my misery through alcohol which made you its slave'".

But what of those spiritual ideals which are the guiding star of civilization? Again,

science tells us that alcohol acts most quickly upon the higher mental faculties, impairing judgment, will, reason, and those finer mental and moral attributes which are the distinguishing mark of the divine element in man, qualities upon which the success of the teacher and all other elevating forces of society must build if the present or the future of the race is to be conserved. No other force does more to lower, or to keep on a low plane, ideals in home life which many an earnest social settlement dweller is trying to raise. "The school, the church, the college, the newspaper, can never effectually give culture to children whose home life is vulgar and wicked".

HAPPINESS-MAKERS AND HAPPINESS-BREAKERS

A second end of social endeavor is to secure a higher degree of happiness. This is the meaning of the homes for destitute children, of the innumerable charitable aid societies, of rescue homes, of settlement activities, and of almost innumerable other organized forms of social helpfulness.

The expenditures for these purposes in money alone are as stupendous as the devotion of time and energy of some of the choicest of lives is inspiring. Though the financial expense is one of the least of the evils, it furnishes a concrete illustration of the waste which alcohol causes. Of the nearly 250 private charitable organizations in Boston, thirty alone spent, in 1906, nearly \$800,000 in varied efforts to relieve distress. Using the most conservative estimates, not far from \$300,000 of this money was expended in alleviating the results of the use of alcohol, and of this amount about \$150,000 was used alone in caring for children made destitute or abused by drink.

THE CRY OF THE CHILDREN

There is indeed "a bitter cry of the children". The Massachusetts Society for the Prevention of Cruelty to Children has reported that sixty-five per cent of its cases were the innocent victims of drink. Jacob Riis tells us in "*The Children of the Poor*" that seven out of every ten street boys in New York, who have any homes, left them because of drunkenness in the home.

Not only the pitably destitute, but thousands of children too early turned into the machine of merciless labor, are the helpless and innocent victims of alcohol which has made them the bond-servants of poverty in the home. "Poverty and child-labor are yoke-fellows", says Mr. Riis, and careful investigations have shown that not less than

twenty-five per cent of all poverty which seeks public relief is due to the use of alcoholic beverages. To this extent the child-labor problem and the alcohol question are one, but they are one in the sense that the tree and the root are one. Cut off the root of alcohol and many a flourishing branch of the deadly child-labor tree will wither and die.

In 1906, the state of Massachusetts expended about \$500,000 in caring for the pauperism in which alcohol was a factor; \$450,000 expense for prisoners whose offenses were partly due to drink. It cost the public treasury of Boston about \$1,500,000 for the crime in which alcohol had a part, and \$480,000 for crime in which alcohol was the sole cause.

The financial waste is sad enough and bad enough, but what shall be said of the unspeakable misery and waste of human life and powers, of the demand it makes upon the sympathies, of the difficulties in maintaining and increasing moral sense in society? To alleviate misery is well. To enable victims to escape from it by their own purposeful efforts is still better; but to leave untouched the great cause of a vast amount of this misery is like "picking the jewel from the mud-puddle," and leaving the puddle in the way of the next traveller.

SOCIAL EFFICIENCY

Life is not merely existence. It is measured as well in terms of accomplishment. Every man owes to his day all of which he is capable by natural endowment and by training. He must ever be at his best to meet the demands made upon him. A few months or even days, requiring quick judgment, prompt decision, alertness to opportunity, may be the turning point in the current not only of his own life, but not infrequently of his entire generation. It is, therefore, the right of society to expect the utmost possible efficiency of its members. For this we establish kindergartens, schools, technical institutions, gymnasiums, public lectures and concerts, hospitals and dispensaries for repairing weakness with as little loss

and delay as possible, and a thousand and one other institutions for developing, training, and conserving all the powers with which man is endowed.

But when all these have done their work at immense public and private cost, society may again be checkmated by alcohol and its narcotic friends. Muscle is paralyzed; nerve control involving precision and delicacy of touch, judgment and power to think clearly, quickly, and intelligently, is impaired. The children of alcoholic parents appear to be handicapped from the start with tendencies

to dullness or backwardness. Bad air, lack of food or of proper clothing may be ascribed as causes of inefficiency, but in a vast number of cases, alcohol will be found the ultimate cause, a subtle mischief maker. As a result, instead of a happy, intelligent, efficient social order, our social system is weighted with a great burden of incompetents, many of whom by reason of alcoholic heredity are not responsible for their condition, but who nevertheless are so many clogs in the wheels of progress, and who will hand on to the next generation a still greater burden of inefficiency.

Much might be said, too, of the operations of kindred evils engendered by other narcotics.

Consequences vary with the substance used, but the net result is similar in kind if not always in a degree,—a lowering of ideals, impairment of physical and mental powers, a blunting of the sense of social responsibility.

The cigaret habit among boys emulating the example of their elders is poisoning the very fountain head of our future civilization. Mr. W. L. Bodine, Superintendent of Compulsory Education in Chicago public schools, in a recent address stated that of 1015 boys whom he had been obliged to send to the Parental School, about 800 were cigaret smokers. Of the entire number only 145 were up in their school grades. These 800 boys might be many times multiplied all over our land. What can be expected of these boys in efficiency in life's work



"And so the Word had breath and wrought
With human hands the creed of creeds
In loveliness of perfect deeds."

or of their sons and daughters in the next generation?

This waste of physical and mental powers, of moral ideals, of happiness and efficiency constitutes a fact too serious to be ignored by anyone having the smallest sense of social responsibility. The alcohol and narcotic questions, so far from being separate problems, become the problems of all, as they are an opportunity for all. "The temperance movement," Prof. Richard T. Ely has said, "is a deep, wide movement of social reform which centers in temperance, but from that center it spreads out in ever more and more inclusive circles until it touches the entire life of society." Alcoholism and narcotism, are both cause and effect of social ills. Just so far as these elements can be eliminated, the whole social problem will be simplified.

GETTING AT THE ROOT OF THE PROBLEM

The necessary methods for dealing with this all-pervading social question are varied, but it is perfectly evident that the great stronghold of permanent success lies in education. One hundred and twenty years ago, Casper Von Voght, the leader of modern scientific benevolence, said, "The most effective means of preventing misery is the better education of the children," and the great leader of modern scientific temperance instruction, Mary H. Hunt, once said, "Seek ye first the temperance education of the children, and all other temperance blessings shall be added unto you." In either case, *prevention* is the keynote. Not much can be done with the victims of alcohol and other narcotics today. Practically everything can be done eventually through the proper training of the children and youth. The place of temperance education in the work for social uplift is therefore natural and fundamental.

Because of its inter-relations, such education must be many-sided. Knowing, feeling, doing are the educational trinity. Complete temperance education, therefore, must reach the reason, the conscience and the will. The child must be equipped with knowledge of the facts as to the character of alcoholic drinks and of other narcotics and the dangers in their use. These truths should be taught dispassionately, truthfully, convincingly by the teacher who knows her subject thoroughly. Secondly, the pupil must be inspired with high ideals for life and character, and with the majesty and beauty of self-control which subordinates the baser, physical appetites to the pleasures of intellectual and spiritual powers. And, lastly, temperance

education must lead the child to voluntary choice of habits of healthful living. Use rationally the first two elements of training and the last will follow naturally and almost easily. But no one of these three may reasonably be omitted.

"TILL THE LUMP BE LEAVEN"

It may be readily admitted that the task presented is no easy one. It demands the teachers' best powers, greatest tact, adequate knowledge, and infinite patience, but, "difficulties have been yielding to enthusiasm ever since the world began." *And it pays.* Count it no small thing in the record of the year to have set even one child's feet permanently in the path of intelligent self-reverence and control. Society is made up of these little units. All growth in the physical organism is but the result of the working of tiny cells. So, in the social organism, the unit of growth is the individual life. The 300,000 teachers of the United States, if each saves but one child each year, are planting the leaven of social progress in the midst of the common life of every 300 inhabitants of the whole nation.

COMRADES OF THE GREATER FAITH

Such are the opportunities and the dignity of temperance work. It is not the temperance "reform," merely seeking to reclaim the lost, or to propagate the prejudices of a few enthusiasts. It is rather the temperance "reformation" which is thoroughly reconstructive and preventive. It is governed by the laws of social relations. It is animated by the common impulse of all social effort, viz., the redemption of man to his divine self. This work, someone has said, "can never be separated, in theory or in practice from that general progress of humanity by which the will of God is made to prevail all around the orbit of human life and in all the sons of men." The very vastness of this problem, therefore, gives it a commanding dignity in its place in social reformation. It constitutes a task which from its inherent difficulties should compel sympathy, and stir to action those native human forces which respond with eagerness to a call summoning to service the best thought and powers of twentieth century manhood and womanhood.*

Again the old heraldic pomp
Of autumn on the hills;
A scarlet pageant in the swamp,
Low lyrics from the rills,
And a rich attar in the air
That orient morn distills."

*Reprints of this article may be obtained from the publishers.

THE FALLACY OF THE OCCIDENT

BY C. W. SALEEBY, M. D., F. R. S.

ALCOHOL is commonly spoken and thought of as a stimulant. Undoubtedly alcohol is taken at times for its supposed stimulant effect upon the powers of work, but it is indisputable that the action of alcohol and of opium, which has led these drugs to play their part in human life is their sedative power.

I submit, then, that there is a very grave and a very stupid fallacy in the common conception of alcohol in the West or opium in the East as stimulants. *They are taken and used not as stimulants, but as sedatives.* It has been demonstrated in the case of both of them that their stimulation of the body is so to speak, preliminary and accidental, and that a depression or soothing or sedation of the bodily functions is their essential character.

Alcohol is a substance of paradoxes; in general it does just the reverse of what it seems to do. Half a century ago not only was it called a stimulant, but it was widely used as a stimulant by doctors. It was supposed to increase vital activity in all directions, and was used as an aid to the body in its fight against disease of all kinds. But in these days of scientific medicine, our whole conception of alcohol has changed. As we have already seen, the public speaks of it as a stimulant, but, in point of fact, uses it as a sedative.

Now if the reader remembers or believes nothing else whatever that I say on this subject, I beseech him at least to believe this:

The habitual use of sedatives—such as alcohol, opium, morphine, sulfonal, trional, veronal, paraldehyde, chloral, cocain, and their allies—is to be condemned without qualification as false in principle and fatal in result. It is true that these drugs will one and all relieve worry, banish care, and procure peace of mind, but it is as true that the worry, the care, and the dispeace will return, bringing seven devils with them, and that the latter end of the man who uses them for this purpose is *not peace.*

They are false friends. For every unit of mental unrest that they remove they will inevitably create many such units. They are false in principle because they make no attack whatever upon the cause of the worry.

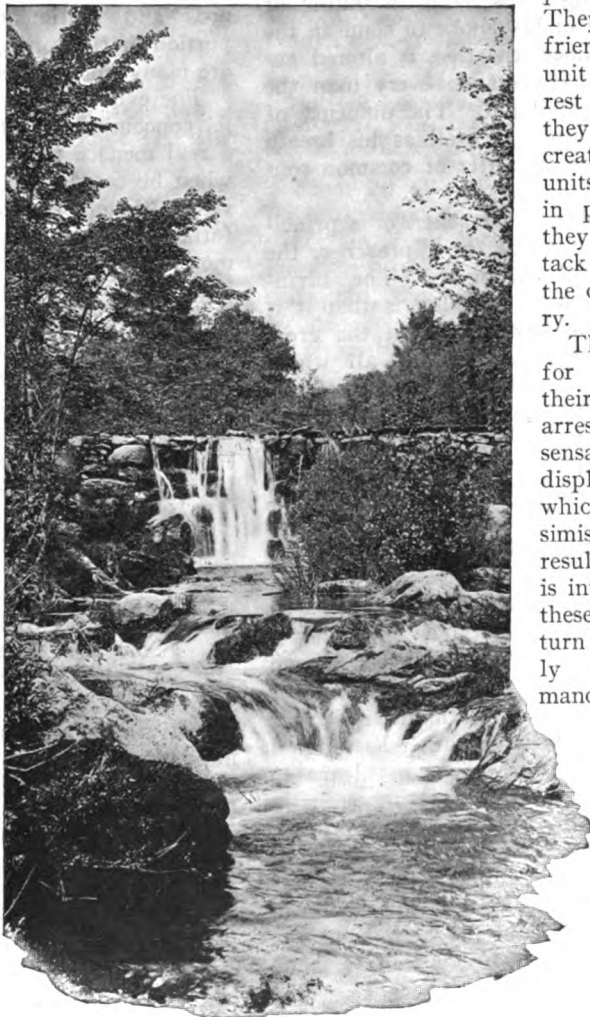
These drugs will, for the time, by their sedative action arrest those internal sensations which are displeasing, and which make men pessimists, but the after result of their action is invariably to cause these sensations to return more abundantly than ever, demanding a larger and an accelerated dose of the drug. I accuse these drugs of being irreconcilable foes of human happiness. Alcohol has no place, use, or purpose in the relief of worry.

—From *Worry: the Disease of the Age.*

FOR THE DOCTORS

Friend.—You've never been called in consultation, have you?

Young Doctor.—No; but I'd like to be. Its nice to charge ten times as much as the other doctor for saying that you don't know any more about the case than he does.—*Sacred Heart Review.*



THE BOUNDARIES OF PERSONAL LIBERTY

WE claim no private and personal right to criticise the private and personal habits of anybody, so long as those habits remain in fact and influence strictly personal and private. A man may eat onions and smoke leather without giving his neighbor a right to protest, so long as he keeps his indulgence, his breath, and his smoke strictly a private matter. But the moment he indulges his habit in public or allows his breath or his smoke to come in the way of his neighbor, the case is altered entirely. Then he confers on every man the right to criticise his habit. The influence of the smoker's example, as well as his breath and smoke, become a matter of common concern.

When the smoker is a teacher, or a principal, or a superintendent, or a preacher, the case becomes still stronger. The invincible argument against smoking is that it is a habit which the moral sense of the great mass of our people—in fact, of all whose moral sense is not blunted, including smokers—finds it necessary to apologize for. It is purely an indulgence, an indulgence which is not harmless and innocent, but which, in the main, has a distinctly noxious and demoralizing complexion, even if the term immoral tendency may not justly be used.

We do not believe we have a smoker-reader, who in his heart approves his habit and will say, solemnly and deliberately, that he is glad he acquired it. We have never known an intelligent and cultivated father-smoker who did not hope his son would keep clear of the habit. Many such a father has offered his boy a reward if he would not learn to smoke. How invariably the mother, even in the lower classes, dreads to see her son begin the habit. In all typical American communities, wherever culture and refinement and good morals are respected, how invariably do a boy's best friends and neighbors and the friends and neighbors of his family, note with regret when he begins to smoke. The event is never one of compliment and congratulation, even among the smokers who are his father's associates. Always the whole set of the boy's best and worthiest friends mark his taking to the pipe or cigar, and his taking up with companions who are already addicted, with sadness and forebodings.

These are facts, significant facts, which no one can deny. What do they mean? They mean that the superintendent, the principal

or the teacher who smokes, sets at defiance the best sentiment of his own better self, of himself as he would be if freed from the demoralizing effects of the habit. As the head of a school or schools in a community, his example exerts a strong influence. He does not belong to himself. In a very real sense he is his brother's keeper; at least the keeper of his brother's son. Can he go clear as a man or as a brother if, in that office of vantage, he helps to break down a boy's moral sense, to weaken his sensitiveness to the standards and sentiments of the most worthy portion of the community, a portion in which are many smokers, as we all know?

The evil is not merely in the smoking and its concomitants. It is a very serious thing, a real menace to a young man's moral fibre, when he concludes to ignore his father's advice, although he does so but to follow that father's example; when he allows his mother's fears and entreaties to go for nothing; when, against the wishes of both father and mother, he deliberately takes himself out of alignment with the best sentiment of the community. Can any man occupying the sacred and influential office of teacher feel conscience clear who allows himself by this example to encourage any young man to take this perilous position?—*Exchange*.

BOOK SUGGESTIONS

BY ELIZABETH LLOYD

ONE of the difficulties in teaching physiology is a lack of well-graded textbooks. There ought to be in every school an oral lesson book for use in the three lowest grades, a primary book for fourth-year pupils, an intermediate book for fifth and sixth year pupils and a grammar school book for those more advanced. If there is no book suited to the primary grades you can provide yourself with a copy from which you can give oral lessons, and a primer from which the children may each read a paragraph in turn and then talk about what has been read. For seat-work the pupils may reproduce as much as they remember.

If there is no intermediate book, the fifth and sixth year pupils can use as a supplementary reader the book that they will afterward study. In this case they should read half of it the fifth year and half the sixth, to avoid tiresome repetition. The seventh year pupils should take half of the advanced book and the eighth year pupils the other half. In the ninth year there may a general review or a high school book may be used.

Side-Lights on Respiration—High SchoolSUGGESTED TOPICS FOR PAPERS OR FOR
DISCUSSION

1. The hygiene of (a) curtains, blinds and awnings; (b) of carpets, upholstery and draperies.
2. Methods of ventilation: (a) by windows; (b) by fireplaces; (c) by furnaces. (Distinguish between drafts and real ventilation which secures sufficient fresh air and disposes of the foul air.)
3. Comparison of actual ventilation of pupils' own home and school-house with the regulations of your own state (or of Mass.) for ventilating school-houses and other public buildings. If the former buildings are now deficient in this respect how can they be brought up to the standard? (Copies of such regulations can be obtained from the State Board of Health.)
4. The most feasible plan for doing away with the smoke nuisance in cities.
5. Discuss different means of heating houses showing which is best and why. Draw diagrams showing proper location of the cold air shaft and of the hot air pipes leading to the various rooms. (Dealers in heating apparatus may be consulted on these points.)
6. Why will a man leading a sedentary life, writing all day at his desk (often with bated breath) often bring on nervous depression, dyspepsia, and the like? What remedies are available for the prevention or relief of his difficulties? Illustrate by comparing the dyspeptic Carlyle with Gladstone or some other brain-worker who breathed deeply and exercised sufficiently.
7. Wm. Spinney says that when people breathe all the pure air they need for health, they eat less, crave less, need less food than others. Is this reasonable? Why?
8. The reasons why the cigaret-user usually has poor blood and often suffers from catarrh, coughs, and, not infrequently, from consumption.
9. The "Great White Plague": how contracted; how spread; how cured.
10. The distinguished Dr. Legrain of Paris says that "Alcohol is the grand purveyor of the homes for the tuberculous." What are the factors which contribute to this well-known result?
11. "In the atmosphere everywhere there is an opulence of oxygen and the greatest need is a capacious and intelligently controlled breathing apparatus to utilize it." How can I, Mr. A, or Miss B, come to appropriate the fullest measure of these riches of the air?

REFERENCES

Apply to the Secretary of your State Board of Health for all bulletins on tuberculosis, pneumonia, and on heating and ventilating school-rooms, stating how many copies of each are desired. Such documents are free. Ask local boards of physicians for data.

Write to Lansing, Michigan, for Teachers' Sanitary Bulletins especially the July-Sept. '07 issue, also issued by the Board of Health; and to Sec'y State Board of Health, Brattleboro, Vt., for Bulletins, including "Treatment and Control of the Tuberculous Patient in his Home," by Dr. Flick, which is excellent.

"The Teacher's Part in the Tuberculosis Problem," by S. A. Knopf, M. D., *New York Medical Record* Feb. 17, 1906, or published in pamphlet form by Wm. Wood & Co., New York City, and the *JOURNAL* Dec., '06 should be in the hands of all teachers.

The teacher is also referred to the article on p. 26 entitled "The Note of the Hoot Owl" for other "Side Lights" on the teaching of this topic.

From 20 to 30 seconds is ordinarily the longest period in which the breath can be held; but if we first expel all the impure air from the lungs by taking several very deep inspirations, the time may be extended to 90 seconds or even to 2 minutes. This should be remembered and acted upon before passing through a burning building or any place where the air is very foul.—HUTCHINSON.

One of the commonest effects of indulgence in tobacco is a chronic inflammation of the throat and upper respiratory passages leading to hoarseness and excessive secretion of the mucous glands.—PROF. ARTHUR R. CUSHNY, M. D., Univ. of Mich.

Inspiration is necessarily a muscular act, and as such would be seriously impeded by nicotine. But even farther than this must act the irritating substances of a smoke which readily causes inflammation and soreness of any mucous membrane. Now, to fully expand the lungs under such conditions is uncomfortable, if not impossible, and respiration degenerates into an incomplete act.—J. W. SEAVER, A. M., M. D.

In the case of illnesses such as pneumonia, consumption, and blood-poisoning, etc. which are caused by microbes, it is proved that the alcoholic habit notably diminishes the power of the tissues to resist the invasion by those organisms.—SIR VICTOR HORSLEY.

The fact that alcohol predisposes to the contagion of tuberculosis has not been contested by any one. It has been pretended that rum, brandy, wine and beer are useful in the amelioration and cure of diseases of the chest and tuberculosis. Dr. Thiron, of the Faculty of Medicine in Paris, considers that nearly all these cases simply add alcoholism to an already possessed disease and thereby hasten a fatal termination.—PROF. DR. A. FOREL.

(Continued on page 32)



Primary Lessons

SECOND YEAR

THE TEETH

SHAPE, APPEARANCE AND USES OF THE TEETH

THE DAY before the lesson ask the children carefully to observe the shape and appearance of the teeth of the kitten, dog, and horse or cow, and also what and how these animals eat.

What is the shape of your kitten's teeth? Of those of the dog? Do you know of any wild animals that have similar teeth? What kinds of food do the cat and dog eat? What do they like best? (Bring out the idea that although they eat many things they would live almost entirely on meat if they could.) What do the tiger, lion, and wolf eat? Why then do they need such sharp teeth?

What are the front teeth of the horse like? Their back teeth? What food do horses eat? What other animals have similar teeth and eat similar food? Why do they need sharp-edged teeth in front? broad flat back teeth?

Which of your teeth are like those of the cat and dog? How do we use our front teeth? What shall we call them? (Cutting teeth.) Which of our teeth are similar to the broad, flat teeth of the horse? How do we use them? What shall we call them? (Grinding teeth.)

How long does it take a horse to eat a meal of corn and hay? What lesson can we learn from the horse which like us has grinding teeth? Lead the children to see that horses never hurry their eating, but chew their food till it is soft and fine. What do you think would happen if the horse bolted down his corn or hay when it had been chewed only a little? Show that we, too, are likely to get sick if we do not chew our food properly.

CARE OF THE TEETH

How many noticed the glistening whiteness of the teeth of the dog and cat? What do we call the smooth hard covering of the teeth? Give the name, *enamel*, if no one in

the class can tell, and explain that the enamel is still harder than the inside of the tooth and will last a lifetime if we take good care of it. If we crack nuts or bite hard things we are apt to crack or break the enamel and then the teeth decay and ache.

Do you think the cats and dogs brush their teeth to keep them so clean? Why not? Explain that the animals do not eat unwholesome food. Their food is coarser and helps to clean the teeth. Crusts of bread and "johnny cake" help to clean our teeth and make them strong.

We need to use tooth-brushes because the inside of the mouth is so warm that the bits of food that cling to our teeth soon spoil and make the teeth decay.

Many years ago no tooth-brushes were made and there were no dentists. Oftentimes young people lost their teeth and had to wear false ones or have bad-looking mouths. We do not enjoy going to a dentist, but he is a good friend to us. He will not have to do much work for us if we make daily use of the tooth-brush and if we are careful not to break the enamel of our teeth.

Instruct the children how to brush the teeth, both up and down and across from front to back, across the crowns, and inside, and explain why such care must be taken.

Warn against picking the teeth with pins, the use of tobacco which makes the teeth yellow, and eating too much candy which makes them decay.

A JAPANESE LEGEND

ADAPTED FOR REPRODUCTION

IN olden times, runs a Japanese legend, a Buddhist priest became acquainted with a daimio's courier, who on his journeys to and from Tokyo would often stop and spend the night at the temple. He seemed to be a man of remarkable intelligence with whom it was a great pleasure to converse upon all sorts of subjects. One night, as the two were talking together, the courier said:

"I thank you for the many favors you have shown me since we became friends; but tomorrow morning I must bid you farewell and never see you again".

"Why must that be?" asked the priest.

"I will tell you the whole truth", answered the courier. "I am not a man, but a fox. For the purpose of deceiving the daimio I assumed human form. One of his retainers, however, became suspicious and learned my secret. He has made a trap and baited it with roasted rabbit in order that he may capture me on my return journey and put me

to death. Alas! It will be impossible for me to escape."

The priest exclaimed in astonishment, "Can it be true that you are a fox? This is a strange story. Since you know all about the trap, why do you not leave the bait untouched?"

"Because it is impossible for a fox when once it smells roast rabbit to keep from tasting it".

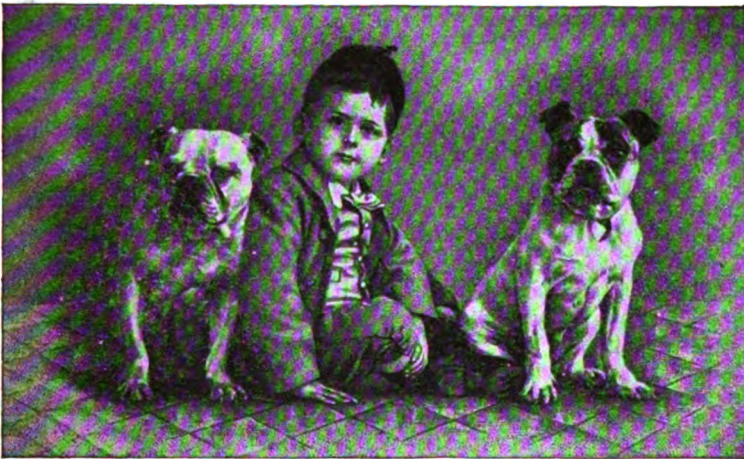
"Why, how is it," asked the priest, "that you, whose wisdom is more than that possessed by most men, can throw away your life for the sake of eating roast rabbit? Among men even a fool would know better."

The fox answered with a bitter laugh, "Ah, it is only roast rabbit that can lead a fox astray. But men, though well aware of the danger, are caught by their love of pleasure, of strong drink, or of gold. To obtain

"Why not?" was my puzzled question. "It seems to me that he has all the requirements for your business, and then, he is the son of one of your own best customers."

"Yes, yes," he answered, "I would like to have done a good turn for that boy for the sake of his parents, they are among my best friends, and, of course, it will not do to have this talked about as from me, but I have been watching George and have seen him several times stealing behind a wall or a fence to smoke a cigaret. I can not place any confidence in a youth who begins like that and, *you know*," the banker added with emphasis, "confidence is a first necessity in a place like this."

A year afterward, George was an habitual cigaret smoker, a source of much distress to his father and mother. They tried many means to cure him of the habit and one day



No candidates for the dentist's chair here.*

these they not only throw away their own lives, but they bring ruin upon their families and the country. These temptations are only other forms of roast rabbit."—*Selected*.



WHY GEORGE WAS NOT A BANKER

CAN you find me a good promising boy who would be likely to work his way up; in two or three years I shall need a cashier, and I want a youth of my own training," said a prominent banker.

"What about George Burns?" said I. "He is a fine-looking lad, developing into a manly looking young man, and is about through high school. I know his father desires a business education for him." The banker looked serious.

"He won't do," he said very emphatically.

his father called and said, "George, see here, here is a check for \$1,000. I will deposit this in the bank and it shall be yours on the day you are twenty-one if you do not smoke again until then".

George looked at the check with great delight and promised to claim it.

But the cigaret had already poisoned his life, and he began smoking again, first secretly, then openly. The check was never his.

I saw George again about two years after the day the check was lost. He was a tall, handsome young man, but the pale complexion and unsteady hand already told the sad story that he had become a cigaret fiend and would never be a banker.

This is not a fable or a romance. It is the relation of an actual fact, save that the name is changed.—*The Boy Magazine*.

*Courtesy of Our Dumb Animals.

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

A FEW CONFIDENCES

WHAT features of the JOURNAL do you find most helpful? At what points can it be made more serviceable to you? If you are a teacher have you used lessons published in the JOURNAL? We do not expect you to use them exactly as outlined. They are only intended to be suggestive. How have you adapted them to your classes?

THIS is your paper. We want you to share in making it of the utmost practical assistance in teaching hygiene and temperance. The editors of the JOURNAL have all come from the teaching profession. The editorial teachers, therefore, welcome the co-operation of the practising teachers. Let's all work together to make this study of hygiene and temperance the very best taught, the most brightly taught, the most successfully taught subject in our schools.

THE editorial ear is open for questions about this study. If we cannot answer them, we will try to find someone who can. The editorial eye is on the outlook for hints as to methods devised by bright teachers, for teaching this subject or some little part of it. But we do not mean to acquire eye-strain in looking for them. We expect that you will be delighted to flood our sanctum with them. You have good things to tell. Let us see them.

WHAT are teachers doing to check or to prevent the use of cigarets? You all want to know more about it. So we are going to have a symposium on the subject. A *crisp new one-dollar bill* will be paid for each of the three best contributions on the topic, "ONE METHOD OF DEALING WITH THE BOY AND THE CIGARET." You may relate your own experience or that of someone else. Be brief and pointed. Contributions should not contain more than 500 words, and they must reach the editors of the JOURNAL not later than November 15th, 1907.

THE NOTE OF THE HOOT-OWL

BY E. L. TRANSEAU

AN English amateur scientist once spent a large amount of time in investigating, verifying, and publishing to the world the momentous fact that the owls of Selbourne hoot in B-flat. Another reported to the French Academy of Scientists the results of a protracted study of "the order and place in which buds and shoots develop on a certain plant during the growth of the initial spike."

These two accounts are cited by a recent medical writer as an illustration of the unprofitable channels in which large amounts of time and energy are often squandered.

"When I look about me," he says, "and see the quantities of matters of real practical interest to humanity that could very well stand a certain amount of thought and labor on the part of intelligent men, and feel that thereby the health, comfort, and interests of humanity would be materially advanced, it seems to me a great pity that all this mass of work on the part of these amateurs of pure science could not be directed into more profitable channels."

Here is a good measuring stick for teachers, as well as for scientists—the things that are worth while.

In passing judgment upon the value of any effort we must first be sure that our standards are broad and comprehensive. Narrow, utilitarian views are not inspiring and they curtail results that might be reaped.

What shall be the standard for judging what is worth while in any branch of school study?

Take the study of physiology as an example, or, in order to be more specific, the subject of respiration. Some of the text-books contain a mass of facts. Are they all of value, or of equal value for the pupil's attention, or are some as useless for all practical purposes, as learning in what note owls hoot?

There is one broad aim that should never be lost sight of in all school exercises, the enlarging of the child's capacity to find sources of enjoyment in after years. Many lives are dwarfed, or worse, by inability to find interesting occupation for hours of leisure. A fact that will appeal to such natural capacities for enjoyment as wonder, the sense of beauty, admiration of power, grandeur, fitness, nicety, etc., is of value for the present and for showing the possibilities in such observation as a fund of pleasure for the future.

Take the children up on a high mountain, in imagination, by picture, story, description

of mountain climbing, balloon ascents, or otherwise, and let them there feel the effects of the rarity of air. In comparing the purity of this high atmosphere with the germ-laden air below, you can deepen impressions of the seriousness of impure air, while you show the disadvantages of the too rare an atmosphere, but you will also, if you are skilful, throw out links whereby to attach wonder-arousing studies of geographical regions, of meteorology, or of mechanical achievements in air navigation.

Another line of facts is useful because it may be a means of arousing interest and sympathy with animals. The panting of the frightened mouse, or bird, or rabbit, the detrimental effect of fear, the effect of other emotions, the effect of over-exertion, all these felt by experience, carried back again into the animal kingdom, arouse sympathy with the over-driven horse or the wild animal pursued by the hunter.

Thus the facts that lead to interest and sympathy with the life of the animal kingdom help to weave that bond of human sympathy which is an inexhaustible incentive to the highest and most satisfactory kind of activities.

There is little question as to the practicality of teaching the ordinary rules of respiratory hygiene, such as ventilation, causes of air impurities, the means of reducing them, the practices that are injurious to the respiratory organs; but even these common places take on an inspiring glow when looked at in light of the things that are worth while.

Is it worth while to teach a boy that tobacco weakens the respiratory muscles, and thus tends to thwart the purpose for which nature has developed this elaborate system for keeping up the internal fires and for purifying the blood? Is it worth while to show how easy a prey to disease germs are the drinker's inflamed, catarrhal throat and air passages?

Is it worth while to watch with interest for other wrong practices that reduce human development and possibilities, to note them down and to study out the ways and means of their correction?

An obscure woman, somewhere, in whose heart burned the divine desire to help some one, made a comfort bag, and into it tucked a little letter expressing her hope that it might bring health and comfort to some one in need of these. It found a lumberman far out in a forest whose weakness was drink. Every time he went to the settlement and received the pay he intended to send abroad to bring across the sea the wife and children, it melted rapidly away in liquor, and he went back alone to his toil while they continued to

wait. The message found him and gave him the strength he needed to overcome his temptation, and not only that; while toiling and saving up the money which eventually brought him his family, he was the means of saving 300 of his fellow countrymen from lives of dissipation. Were they worth while, that little comfort-bag and its little letter?

The teacher's opportunities for doing things that are worth while are so much the greater as preven-

tion is greater than cure. Only a comparatively few of these opportunities can be pointed out to her. She must sense them in her own place and environment. She must be self-prompted in seeking for them; she must welcome the information that will deepen her conviction of the need of her work.

For reward, she will not look for plaudits or honors, though they may come, nor for even a knowledge of the harvest her efforts will eventually bring forth. Her greatest reward will be the inner satisfaction of knowing that she has not frittered away her time in learning the note on which the owl hoots, but that she has done the thing worth while.



The world is only saved by the breath of the school children.

—THE TALMUD.



Grammar Lesson

FIFTH YEAR

THE HOME

WHILE to some, the subject of the home may not seem to come quite within the province of physiology, none will deny that the home environment has a very vital bearing upon both hygiene and temperance. Statistics show that, taking the country as a whole,* about 75 per cent of all pupils leave school at the end of their fourth year's work, and these are largely the children of the poor and of the foreign born, both classes of whom need more or less training in the matter of hygienic home-making. The subject is, therefore, not only an extremely interesting one to the child, but also a very practical and necessary one. Moreover it offers opportunity for emphasizing the economic side of the narcotic question as no other physiology topic does.

NOTE: It will no doubt add much to the interest of the lessons and help fix the points in mind if the children make little scrap-books which may have plain or fancy covers. On the first pages may be pasted pictures of the different homes mentioned, and these be followed by pictures of the homes desired, diagrams of the floors, cost and arrangement of furniture, little copies of good pictures, poems, or stories illustrating various parts of the lessons, simple statements of the points of hygiene, and the examples showing the expense of wasteful and vicious habits. Perhaps the children may also like to write little stories of home life and the difference between happy and unhappy homes.

KINDS OF HOMES

A day or two before taking up this subject, ask the children to bring to school several kinds of bird's nests (if these cannot be procured pictures will do), also pictures of houses they would like for homes. These should be supplemented by illustrations, in geographies and elsewhere, of as many sorts of homes as possible, such as houses of bamboo, Esquimaux huts, Indian wigwams, homes of the cliff-dwellers, leafy bowers of some natives of the tropics, and of the caves and cave-dwellers.

*Bulletin Amer. Acad. Med. June, 1908.

Show the nests to the class, one at a time, and discuss the formation and adaptability of each. How many have seen ant hills, the burrows of animals, or beaver houses? Describe them from memory or from printed descriptions. Why do these creatures go to so much labor to have homes?

Tell of the time when people lived in hollow trees and among the branches of trees and examine the pictures of the leafy shelters of the tropical savages. What would be uncomfortable about these homes? Show pictures of the caves and cave-dwellers and skilfully lead the class to see how these led up to the wigwam and the log house and the latter through successive stages, to the beautiful homes of our own day.

USE OF HOMES

For shelter—Show pictures of Arab tents and bamboo houses such as are used in hot countries. What kind of weather is common where the Arabs live? the Chinese and Japanese? What is the use of these light shelters? What is the climate where these people live? Show ice huts of the Esquimaux. What is the use of these queer huts? Why do these people not build houses of wood or brick? (Here, as elsewhere in the lesson, there is opportunity for correlation with geography.) What is our need of comfortable homes in the winter? in summer? when it rains or snows? See that the children have the thought clearly in mind that we need homes to shelter us from heat, cold and the elements.

For protection—Show pictures of the cliff-dwellers, of old castles and of the block houses of the early settlers. Why did these strange Indians build these cliff homes? Why the need of blockhouses and of forts and of such walled castles surrounded by deep ditches of water? Speak of the walled cities of Palestine where even yet a number of homes are protected by one big wall. Show that these were and are necessary means of protection from enemies. Show that while in our own Christian land, they are not usually needed for that purpose, in some other countries they are, and that we need homes for privacy.

Place where young may be reared—Why do birds build nests? foxes dig burrows? Lead the class to see that while most if not all creatures make or seek some sort of shelter, quite the most important use of their homes is that of providing a safe, comfortable place where their helpless young can be fed and cared for till they are strong enough to take care of themselves. The first rough

shelters or homes for people were also for that purpose. Notice, too, that there must be an abiding place for workers.

NOTE: The following topic offers considerable range for correlation and may itself serve as the basis for several lessons, the teacher expanding or contracting the suggested plan according to the specific needs of her class.

In drawing have the children copy simple diagrams (exhibited by the teacher) drawn to scale of a two-story nine-room house, etc. The house and furnishings such as chairs, bedsteads, tables, bathtub and kitchen utensils may be made with sticks or with sticks and peas, or they may serve as objects for paper cutting or folding. If manual training is taught, the pupil will be pleased to make some simple things for the home. From advertisements in periodicals or catalogs may be cut pictures of household furnishings and these be properly arranged on sheets of paper representing the various rooms or they (the furnishings) may be simply represented by squares or circles. In presenting during class development the prepared diagram of the rooms of the house, or indeed various objects, enhance the interest by the motive of surprise, keeping each object covered till the moment for its use has come.

WHAT MAKES A HOME

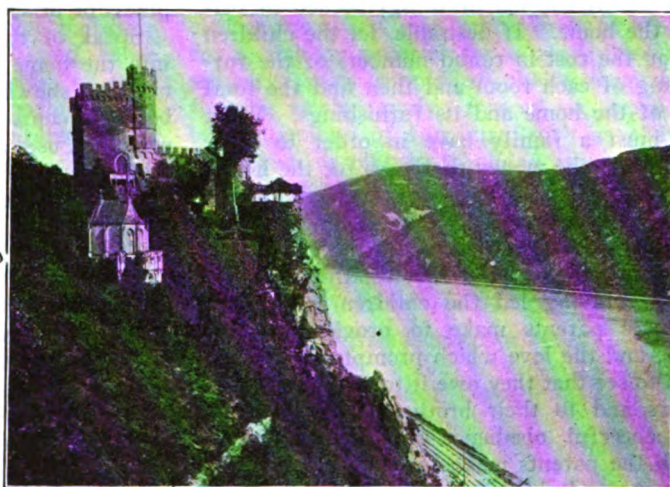
The home-making loving spirit—Ask each member of the class to compare in his or her mind the most happy with the most unhappy home they ever seen, and ask several to tell without giving any identifying particulars the reasons they think are responsible for the one being so much happier than the other.

Question till you bring out the idea that the happiness of the home depends far less upon the relative cost of the home and its furnishings than upon the neatness with which it is kept and the maintenance of an atmosphere of love, unselfishness, and peace. Emphasize the point that each child is, in part, responsible for the happiness of his home; he must be sunny-tempered, helpful, and kind.

The building and the care of the home—Let each child show the picture of such a house as he would like his own to be. Discuss the relative advantages of these and lead the class to see which is best suited to the average family. What would be the pleasantest and most healthful location for such a house? Why set it on a little elevation? Why not have it too much shaded by trees? Which way should the living-rooms face? Why is it best to have the sleeping rooms above the first floor? Why is it dangerous to throw

slopes near a house or to permit pools or ponds of stagnant water to remain? Why not have barns or out-buildings near? How ought the front and back yards to be cared for?

Have ready on a flexible blackboard or a sheet of paper which can be kept rolled up till time for use, simple diagrams drawn to scale, showing plans for the rooms (including a bath-room and pantry) of a two-story, nine-room house. (Such a plan may be found in some periodical or obtained from a carpenter if the teacher cannot herself prepare it.) The general arrangement of cupboards and vegetable bins in the cellar may be mentioned and thus the way opened to discussing the care of the cellar. Ask several to tell how this ought to be done and supplement with such rules as may be necessary. See that the class clearly understand the menace to health which decaying vegetables or refuse of any sort, leaking sewer or



"By the fireside still the light is shining
The children's arms around the parents twining,
From love so sweet, O who would roam?
Be it ever so homely, home is home."

water pipes, or undue dampness, may be to all in the home.

How shall we fit up the kitchen and pantry? Why have painted walls and little furniture? What particular need here of scrupulous cleanliness? Why not empty greasy water down sink drains? What is the meaning of foul odors from pipes, and what remedy should be applied? (Waste and sewage pipes ought to be flushed out frequently with some cleansing, disinfecting agent like a strong solution of copperas or chloride of lime. Boiling soapsuds will do.)

What are needed in a well-arranged dining room? Draw diagrams of the dining-table properly set for the family. Review simple

rules for table manners. Relate some story showing that nowhere else is the distinction between good and ill-breeding shown so clearly as when people are eating. Why is it especially desirable that cheerfulness should rule at table?

Why should simplicity be the keynote in the furnishing of sitting and sleeping rooms? Lead the class to see that such an arrangement is more artistic, more hygienic and restful, and makes the household tasks infinitely lighter. The question of what pictures are suitable for each room may properly be discussed at this point. Why a few good copies of famous pictures rather than chromos?

WHAT MARS A HOME

Disobedience, destructiveness, ill-temper— Who makes the home for the children? What does it cost the father? the mother? Review briefly the list of things needed to furnish the home. If desirable, let the children reckon the cost in round numbers of the furnishing of each room and then find the total cost of the home and its furnishings. What else must a family have in order to live? Who earns the money that pays for the home, the food, clothing, and for medical attendance? Who cares for the home, prepares the food and clothing, and nurses the sick ones? Who in the home know best what ought to be done? Having led the children to see the sacrifices parents make to provide for the home, and the love which prompts these, lead them to see that they owe it to these dear protectors and to their brothers and sisters to give cheerful obedience to the wise rules which the parents make for the best good of the home and children, and to take all possible care of the things which cost so much time and strength. The story of Washington's reverence for and strict obedience to his mother, or of Garfield or of others may serve to emphasize the lesson that the truly great have been grateful and obedient to their parents and learned to command because they had first learned to obey.

*Tobacco—*Tell the following true story of Mr. W. who had a large family, and although he worked very hard, found it difficult to get money enough to feed and clothe them. He was naturally a kind man and loved his family, but he had become the slave to tobacco, and if he could not have his pipe and chewing tobacco as usual he would be so ill-natured that he made everybody uncomfortable. His patient, hard-worked wife and little children detested the smoke from his pipe, but

every evening he filled the air of their only living-room with the stifling clouds of smoke. If he had not money enough to buy both flour or sugar and tobacco, he deprived his family of these necessities of life and took the money for the tobacco which hurt his health and gratified only himself, while it distressed the others. He was so selfish that when the Civil War closed, in which one of his sons had already been killed and another was still fighting and so was in daily danger, he did not care at all about the news of peace that filled our country with rejoicing and sent his son to safety; his only thought was that he had not been able to get his accustomed tobacco for a day or two. Do not give the idea that everyone who uses tobacco would go to such an extreme as this man did, but show clearly by illustrations familiar to all that its tendency is always to make people heedless of the comfort and happiness of others and wasteful of money.

Speak of the unhappiness that is brought into the home when a boy begins the use of cigarets, showing that from the very first he begins a course of deception. He keeps bad company, uses a weed which he knows his parents would forbid, grows careless in his manners and dress and more indifferent to the comfort of others, and as the habit grips him tighter and he has to have more cigarets, he is often tempted to steal to get the money for them. He begins to be nervous and irritable, is not so active and bright, falls behind in his lessons, and frequently becomes a truant. His habit can be no longer hidden, and his parents are filled with grief that he has deceived them and has also been breaking down his health and destroying his best chances of success and happiness.

*Alcohol—*What is the effect of alcohol upon the health? Speak of the fact that great doctors (among others Sir Andrew Clark) connected with hospitals tell us that seven out of ten of the sick and quite a large share of those committed for accidents, come for treatment because of the use of alcoholic drinks.

Tell the class, further, that about one-half the children who have to be taken care of by charity are in that case because of drinking among those who ought to have cared for them. Many of the paupers in almshouses and the criminals in prisons were also brought to those places through drink. Think of all the homes thus broken up.

In a series of simple problems like the following which may be placed upon the board and copied and solved by the class in arithmetic thus leaving more time for discussion in

the physiology class, show how the use of tobacco or alcoholic drinks by a member of the family, while it gratifies that one alone, deprives the others of their fair share of the family fund, and often subjects them to discomfort or even to pain and want. Speak of the great need of saving something to be used when there is sickness or lack of work, and of the joy of having something with which to help others in sore need. There are taxes to be paid and many unexpected calls upon the family income. Money can be used but once. If it is spent upon these vices, something else must be done without. Must the family go without suitable clothes, have a cheaper rent, poorer or less abundant food, or shall they take the chance of facing a rainy day without any savings which often means contracting a heavy debt?

Be careful that no reflections are cast on parents who have these habits, but emphasize rather the folly of anyone's forming slavish habits which must certainly deprive the users of many more desirable things, and cause them to work a considerable portion of each year to earn money for these harmful narcotics, which they will never want unless by beginning their use a craving is created.

PROBLEMS

The average working-man has five in his family, and receives from \$500 to \$600 per year, say \$40 or \$50 per month. Of this he ought to save at least one-fifth for use in case of sickness, accident or lack of work. Suppose he has \$50 per month, and his family expenses are as follows: rent \$10, food \$15, clothing \$10, and for medicines and dentistry, books, breakage, and incidental expense \$5 (almost too little to cover them.):

1. If a man smokes 10 cigars at \$.05 each per week, what does his habit cost him per month? per year? If, instead of burning up that sum each year, he put it in the savings-bank, what would he have at the end of 10 years? 20 years? (Bring out the point that there would be much more than this because of the interest. The teacher may compute the compound interest and allow the children to add it to the sum they have reckoned.)

2. If a man drinks 2 glasses of beer each working day and treats 3 times a week, what does he spend a week? How much in a year? in 10 years? (Emphasize the points that the beverage has no food value and really harms him.)

If each other member of the family of 5 spend the same amount for ice cream, candy or other luxuries, what part of the month's salary (\$50) would be wasted?

3. If a man drinks 4 glasses of beer each working day and treats 4 times, what would his bill be for the week? for the month? for the year?

How much flour at the prevailing price would such a month's beer-money buy? how much sugar?

5. Most men who drink alcoholic beverages also smoke. If a man spends \$2 a month for tobacco and \$3 for beer or other such drinks, what part of his month's wages (\$50) does he waste? Compare that sum with the amount he pays for rent; for food for the entire family; for clothing.

At the above rate, what does he waste in a year? How much time then has he worked just to support his habit? (Emphasize the point that this man must work more than one month out of the twelve to support these indulgences.)

Write a list of useful and desirable things which might be bought for that sum. (Suit of clothes for a boy, or a pretty dress or a coat for a girl, or material for a good dress for mother; year's supply of choice magazines for the whole family; five or six excellent books; articles of furniture, such as chairs, table, rug, or pictures; holiday excursion for the family, etc.)

KEEP A-GOIN'!

BY FRANK L. STANTON

If you strike a thorn or rose,
Keep a-goin'!
If it hails or if it snows,
Keep a-goin'!
'Taint no use to sit and whine
When the fish ain't on your line,
Bait your hook an' keep on tryin'
Keep a-goin'!

When the weather kills your crop,
Keep a-goin'!
When you tumble from the top,
Keep a-goin'!
S'pose you're out of every dime?
Gettin' broke ain't any crime!
Tell the world you're feeling prime—
Keep a-goin'!

When it looks like all is up,
Keep a-goin'!
Drain the sweetness from the cup,
Keep a-goin'!
See the wild birds on the wing!
Hear the bells that sweetly ring!
When you feel like singing—sing!
Keep a-goin'!

HOW ALCOHOL IMPAIRS RESPIRATION

Alcohol is excreted by the lungs to some extent. The direct toxic action exerted by it on the mucous membrane is probably the cause of the bronchial catarrh which is not uncommon in drinkers.—ALLBUTT'S SYSTEM OF MEDICINE.

Irritation of the mouth, throat and upper air passages from alcohol is common in my experience. One of the very commonest of all inflammations occasioned by alcohol is bronchitis, tracheal, laryngeal and nasal catarrh.—JOHN MADDEN, M. D.

Besides the predisposition to tuberculosis caused by alcohol through the weakening of the whole organism and the general disturbance of nutrition especially by impairing the respiratory and digestive organs, is his frequent exposure to cold which if he were sober he would avoid, sitting hour after hour in the bad air of the saloon, etc., while indirectly, through poverty and bad environment the alcohol prepares the ground for the disease.—HOPPE.

It is important here to explain briefly the twofold way in which alcohol renders the lungs liable to disease. First, let it be remembered that persons with whom its use is habitual are more liable than others to an irritation of the mucous membrane of the throat, which they are always attempting to "clear." This is not in itself dangerous, but when a similar condition of catarrh supervenes in the large tubes of the lungs the healthy condition of these disappears, and the patient becomes more liable to bronchitis and to infection by the germs of tuberculosis and pneumonia.

Secondly, the repeated taking of alcohol leads to a dilatation of the blood vessels of the lungs, and these vessels being very numerous, a tendency to congestion occurs. Lungs in this condition of incipient congestion are readily affected by climatic falls of temperature, and by the presence of bacteria, and the outlook when such lungs become actively diseased is proportionately serious.

Not only does the man who indulges in alcohol lay himself open to chances of tubercular infection, but his children are born with a diminished power of resisting this disease. The children of drinkers are frequently attacked with hip-joint disease, spinal disease, joint swellings, glandular swellings, "consumption of the bowels" and of the lungs, even although the parents are not tuberculous.—SIR VICTOR HORSLEY, and MARY STURGE, M. D., London.

HELPS IN THE MAKING OF A TEACHER

Let no earnest teacher be disheartened by the statement so often made that teachers are born not made, for, on the other hand, as Professor Brumbaugh points out, most of the successful teachers of to-day are not born but made.

The successful teacher has high ideals, thorough acquaintance with the underlying principles of education, a knowledge of the technique of class-room management and ample resources of methods and devices by which to accomplish easily and smoothly the large results of the ideal school. She is a growing teacher because she is ever studying the latest and best literature of her profession. We are happy to introduce to our thousands of teacher-readers a trio of books which in a marked degree meet the above needs and thus complement each other. All are attractively bound and well printed.

*The Making of a Teacher** is filled to the brim with vital educational principles, concrete examples, inspiration and soul enrichment all presented in the most entertaining style. Many of the chapters, originally written for the *Sunday School Times*, have proved their value to Sunday School teachers. To these chapters the author has added much new and valuable material, together with questions for study, and has so adapted the whole to the needs of the general teacher that in many places educational authorities have placed it in teachers' reading courses.

The second of the trio, *Classroom Management,*** sets forth clearly and particularly the way in which to meet and solve successfully the different problems of the school-room. Primarily intended for teachers' training classes, it is at once simple and complete enough to be of the utmost service to the young and inexperienced teacher while its wealth of pedagogical material and abundant references makes it equally valuable to the instructor of many schools.

*Hints and Helps**** gives the most successful devices of 150 wide-awake teachers, the hints covering the work of the school day from the opening exercises to suggestive plans for quiet dismissal at night.

*THE MAKING OF A TEACHER, by Martin G. Brumbaugh, Ph.D. 360 pages. Philadelphia. Sunday School Times Company. \$1.00 net.

**CLASSROOM MANAGEMENT, by William Chandler Bagley, Oswego, N. Y., Normal School. 330 pages. New York. MacMillan Company. \$1.25 net.

***HINTS AND HELPS FOR THE SCHOOLROOM, arranged by Caroline S. Griffin. 182 Pages. New York. A. S. Barnes & Co.

**Publications received and indexed for reference by Scientific
Temperance Federation (Continued)**

- AMERICAN PROHIBITION YEAR BOOK, 1907.
BULLETIN AMERICAN ACADEMY OF MEDICINE, October, 1907.
BARON, C. P.—Among Robbers.
GRAHAM, ROBERT—Twenty-Fifth Annual Report of the Church Temperance Society.
HOULDERSHAW, ARTHUR—Scientific Temperance Instruction in Day Schools in England.
HYSLOP, THEO. B.—Alcohol and Empire Building.
JUDGE-ADVOCATE-GENERAL, U. S. A., Report of (1907) [Canteen.]
MASSACHUSETTS STATE BOARD OF INSANITY, Eighth Annual Report, 1906.
MASSACHUSETTS STATE BOARD OF CHARITY—Twenty-Eighth Annual Report, 1906.
MASSACHUSETTS STATE BOARD OF PRISON COMMISSIONERS—Sixth Annual Report, 1906.
MASSACHUSETTS TOTAL ABSTINENCE SOCIETY, Thirty-Sixth Annual Report.
READ CHARLES, M. D.—A message from England.
ROCHAT, GIOVANNI—L'Alcoolismo in Italia.
MEINERT—Dr. Starcke and his Book.
ROBERTS, CHARLES, M. P.—The working of Local Option in the Cities.
ROSENWASSER, CHARLES A., M. D.—Apo-morphine in Acute Alcoholism.
STUBBS, GEORGE W.—Evils of the Cigaret.
SULLIVAN, W. C., M. D.—Alcoholism.
TAYLOR, E. O.—The Dispensary.
TORRANCE, HON. GEORGE—Relation of the Cigaret to Crime.
TRICKETTS (Attorney-General)—Law Enforcement.
UNITED STATES DEPARTMENT OF AGRICULTURE.—Dyes, Chemicals and Preservatives in Foods.
VAN CISE, JOEL.—Effects of Total Abstinence on the Death Rate.
WAUGH, DR. W. F.—Alcohol Not Needed in Medicine.
WISHART, JOHN, M. D.—Alcohol and Its Hereditary Effects, Simple Substitutes for Alcohol.
WILLSON, ROBERT N. JR., M. D.—The Social Evil in University Life.

The Latest Authoritative Book on the Alcohol Question

ALCOHOL AND THE HUMAN BODY

— BY —

Sir Victor Horsley, Hon. M. D., Halle, etc,
Professor Pathology in University
College, London.

and Mary D. Sturge, M. D., Physician to the
Birmingham & Midland Hospital
for Women.

PARTIAL CONTENTS—Alcohol a Drug; Effect of Alcohol on Intellectual Processes; on the Emotions; on the Neuro-Muscular System; Degeneration and Disease of the Nervous System Due to Alcohol; Action of Alcohol on the Digestive System; Is Alcohol a Food; Effect of Alcohol Upon the Heart and Circulation; on Metabolism and Power to Resist Disease; upon Children; upon the Race. (See Sept. Journal p. 14).

**ABSORBINGLY INTERESTING SCIENTIFICALLY ACCURATE AND UP-TO-DATE
INDISPENSIBLE TO EDUCATORS AND SOCIAL STUDENTS**

16 CHAPTERS

370 PAGES

16 BEAUTIFUL PLATES

21 DIAGRAMS

PRICE, \$1.50 Postage, \$.15

SPECIAL OFFER

Alcohol and Human Body	\$1.50	ALCOHOL AND THE HUMAN BODY with SCHOOL PHYSIOLOGY JOURNAL ONLY \$1.80 POSTPAID
Postage	.15	
Journal, one year	.60	

— ADDRESS —

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Journal Premium Offers

All subscriptions must be new, not renewals of old lists. Only ONE premium given with any one list of new names. These offers do not apply to lists of names sent previous to Oct. 15. Magazines and premiums may be sent to different addresses.

ALCOHOL AND HUMAN BODY (See page 32a) given with new names at \$.50 as follows:	With 15 names.
	With 10 names and \$.40
	With 5 names and \$1.10

CLASSROOM MANAGEMENT (See page 32) given with new names at \$.50 as follows:	With 15 names
	With 10 names and \$.60

MAKING OF A TEACHER (See page 32) given with new names at \$.50 as follows:	With 10 names
	With 5 names and \$.50

PICTURE OF MARY H. HUNT, (large) given with new names at \$.50 as follows:	With 15 names
	With 10 names and \$.40
	With 5 names and \$.55

Smaller Picture (10 x 12) of MARY H. HUNT, given free with 5 new names at **\$.50** each.

School Physiology Journal Club Offers

Every group must contain the SCHOOL PHYSIOLOGY JOURNAL. Magazines may be sent to different addresses. Subscriptions may be NEW or renewals. Many more combinations for the asking.

MAKING OF A TEACHER.

(See page 32)

Making of a Teacher, . . .	\$1.00	OUR PRICE \$1.25
Postage, . . .	.12
School Physiology Journal, . .	.60	

CLASSROOM MANAGEMENT.

(See page 32)

Classroom Management, . . .	\$1.25	OUR PRICE \$1.65
Postage, . . .	.12
School Physiology Journal, . .	.60	

FAMILY GROUPS.

World's Work, ‡ . . .	\$3.00	OUR PRICE \$3.25
McClure's, ‡ . . .	1.00	
Delineator, ‡ . . .	1.00	
School Physiology Journal, . .	.60	

TEACHER'S GROUPS.

Normal Instructor, . . .	\$.75	OUR PRICE \$1.00
School Physiology Journal, . .	.60	

Normal Instructor, . . .	\$.75	OUR PRICE \$1.65
Primary Plans, . . .	1.00	
School Physiology Journal, . .	.60	

CLASS A.

Success, . . .	1.00	Any 1 with JOURNAL \$1.15
Woman's Home Companion, . .	1.00	
American (Leslie's), . . .	1.00	Any 2 with JOURNAL \$1.80
Our Little Folks, (new) . . .	1.00	
American Motherhood, . . .	1.00	Any 3 with JOURNAL \$2.50
Primary Plans, . . .	1.00	
American Boy, . . .	1.00	

CLASS B.

C. E. World, . . .	\$1.50	Either with JOURNAL \$1.70
Suburban Life, . . .	\$1.50	
Little Chronicle, . . .	1.50	

‡ Single subscriptions for full price only.

‡ This combination cannot be changed.

Anti-Cigarette Helps. Timely booklets on a timely topic. Teachers! Parents! Do you know what can be said against the tobacco habit? These pamphlets will tell you.

Power of the Tobacco Habit, \$.20. The Cigaretist, \$.05. Boy and the Cigaret, \$.05. Cigaret and Tobacco, \$.05. Why the Cigaret is Especially Harmful, \$.02. The Cigaret and the Schoolboy, \$.01. Samples of each, \$.50. International Course of Study, \$.05. Samples of Anti-Alcohol Leaflets, \$.10.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

THE SCHOOL PHYSIOLOGY JOURNAL

Rec
DEC 19 1907
B.P.L.
Boston Public Lib



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVII. NO. 4
DECEMBER, 1907

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid, to any address on request.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

New

Natural Geographies

In the new series of these sterling geographies emphasis is laid on industrial, commercial, and political geography, with just enough physiography to bring out causal relations.

The text is clear, interesting, and explicit.

Two sets of excellent maps are provided, one for study and the other for reference.

The engravings are distinguished for their aptness and perfect illustrative character.

The series is published both in two-book and four-book forms, which meet the various methods of supply.

Natural Introductory Geography . . . \$0.60

The same in two parts. Each40

Natural School Geography1.25

The same in two parts. Each75

American Book Company

New York

Cincinnati

Chicago

• CONTENTS •

	PAGE
The Hour—The Opportunity—The Man	49
"Need H—Have Die?"	51
Closing Santa Claus' Door	53
Editorials	55
Cigaret Using—Whose the Responsibility	55
Co-operative Plan for Eliminating the Cigaret	58
Primary Lesson—Brain and Nerves	70
Sparks from the Teacher's Anvil	67
High School Lesson—Circulatory Lesson	72
Book Notices	74

THE SUFFOLK

ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers.

24 CONGRESS St. and 275 WASHINGTON St.

BOSTON, MASS.

THE SCHOOL PHYSIOLOGY JOURNAL, (18 h year) established by Mrs. Mary H. Hunt, should be in the hands of every progressive teacher and temperance worker. Remember that under the special "State Journal Club" offer, 5 teachers, or others, (if list is strictly new) may be furnished this invaluable help one year for only \$2.00. Sample Copy on request.

SCHOOL PHYSIOLOGY JOURNAL.

23 TRULL STREET,

BOSTON, MASS.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVII

BOSTON, DECEMBER 1907

No. 4

A Christmas Prayer for the Lonely

Purge my heart from hard and bitter thoughts. Let no shadow of forgetting come between me and friends far away. Bless them in their Christian mirth; and hedge me in with faithfulness, that I may not grow unworthy to meet them again. Give me good work to do, that I may forget myself, and find peace in doing it for Thee. Though I am poor, send me to carry some gift to those who are poorer, some cheer to those who are lonelier, * * * and light Thou my Christmas candle at the gladness of an innocent and grateful heart.

—By Henry Van Dyke.

THE HOUR—THE OPPORTUNITY—THE MAN

BY CORA FRANCES STODDARD

THE twentieth century Rip van Winkle roused with a start. Up from the south there came to his ears a strange sound, "The South is going dry," and as he listened in amazement, there suddenly burst upon him notes of jubilation from north and east and west, "The nation is going dry."

Great things happened while this modern Rip was comfortably dozing. Little intimation of them had woven itself into the fabric of his dreams supplied by the general press which until recently has mostly been silent as to the transformation taking place in the public mind concerning the saloon. And now that he is fairly awake, he learns that nearly half the territory in this great nation has already banished the saloon.

This is not the place for discussing either the practical or the theoretical arguments for or against prohibition. But as a fact in the present current of national life, it must be seriously considered by everyone who, like the educator, is responsible for the development of high personal and national ideals.

The educator stands in one relation to this whole question, as a citizen. As a teacher, he holds toward it another and special relation. By legislative action the nation has committed to him the duty of doing everything that the school can do, to train its future citizens and home-makers in habits of health and sobriety. He meets one of four conditions: the community has already prohibited drink, is on the road to doing it, is actively in favor of the open saloon, or is absolutely

indifferent to the question. The school serves the community. What relation should the school temperance training hold to these various community needs?

Some clue to the answer may be found in experiences of the past. Once before, a great popular uprising swept the open sale of alcoholic drinks from a dozen or more states. How can anyone be sure that a similar reaction will not overtake the next generation?

Historians of the reaction period tell us that among several conditions to which it was due, two were preeminent, the spread of the idea that alcohol was nutritious and its moderate use harmless, and the ignorance of the young voter as to the evils which had stirred their fathers to work for abstinence and to sweep away the old license system. Certain forms of education had preceded the prohibitory legislation, but the nation had yet to learn that the "Thou shalt not" of prohibition must be continually buttressed by the "I will" of education.

There is no "short cut" in social reform, however much we Americans may demand quick results. Evolution, not revolution, is its keynote.

The question of the permanent abolition of intoxicating drinks, therefore, speedily resolves itself into a question of education.

Education is a *peaceable* method. There may be differences of opinion among intelligent men and women as to the advisability of prohibition in given cases. There can be no difference as to the advisability

of education, the letting in upon the consciousness of all the people the light of the truth about alcoholic drinks. Without excitement, without public turmoil, without the commotion of the strife of combat, the teacher has it in his power to serve his community's needs by the quiet, regular, matter-of-fact seed-sowing of truth and influence.

Education is a *powerful* method. Enthusiasm expressing itself in legislation may be effervescent, effective while it lasts, but leaving flatness when it has passed. Education grips conviction and will, the forces which are the motive powers of human action.

Education is a *permanent* method. It lays, little by little, that stable foundation on which must and will rise the sobriety of a people sober because they choose to be, not because they are compelled.

Obviously, to make education effective precaution must be taken that every child, wherever he lives, shall be thoroughly taught the reasons why the use of alcoholic beverages is dangerous, and trained to those habits of self-control that will make abstinence voluntary. If he lives in a prohibition state, there is possibly even more reason why he should be thus taught, because, ordinarily, he will have small occasion to acquire that partial knowledge through observation which come regrettably early to most children in communities where these beverages are openly sold, and it is yet too soon to expect that temptation will immediately be removed from all parts of the land.

The child from the immigrant home knows little or nothing of the danger in the habit which is often a part of his home life. Five years or less may see his father a voter, and a voter, who, unenlightened, may help perpetuate or restore the sale of his accustomed beverage. Multiply the one by 500,000, about the number of male adult immigrants who entered the United States in 1906 alone, all of whom are potential voters, and most of whom are consumers of alcoholic beverages, and the necessity of implanting the principles of sobriety in these homes through the children of the schools becomes appallingly apparent, if today's successes in abolishing drink are to be maintained.

Nor does one need go to newly-arrived Americans to discover possible sources of reaction. The fact that in the Oklahoma-Indian Territory vote on prohibition, nearly one-third of the counties or districts, taking the new state as a whole, voted "wet," while doubtless explainable in several ways, shows that a tremendous work of popular education still remains if the saloon and its conse-

quences are to be abolished permanently.

But the situation is hopeful, nevertheless. There are said to be about 20,000,000 children actually in the schools of this country. If these children receive but eight temperance lessons a year, 160,000,000 lessons on this subject with their truths and influence will enter yearly the lives and homes of the children of the nation.

A great opportunity, therefore, confronts us. To conserve the victories already won, to lay that foundation of knowledge that will ensure future intelligent action on the alcohol question, to illumine the darkness of ingrained prejudice and custom among foreign-born and native-born with the light of truth,—this is the opportunity of the present, and the teacher is the man of the opportunity.

Teachers are already seeing the fruits of past labors. At a recent convention of one of the great national temperance organizations, forty-five out of fifty speakers paid tribute to the influence of the school temperance teaching in making possible the recent remarkable results in abolishing the saloon. This is but a hint of what is yet to come.

The work must be done regularly, faithfully, persistently. It can not be most effective if left entirely to chance occasions. Such are often useful, but most so when they reinforce the teaching which has been a part of the regular school instruction.

The work must be done early, when the child mind is most susceptible to influence and when the largest number of children may be reached. *Less than ten per cent of the children in school are in the grades above the sixth school year.* If we would reach and teach more than a tiny minority of our future men and women we must do our best temperance teaching in the first six school years.

Surely, every teacher must feel the compelling power of this special call to service. Other forces are doing magnificent work. They are studying the subject in all its aspects. They are executing plans carefully laid to secure definite results. This, too, educators must do before they can expect to see all the results of which their work is capable. Here is our responsibility by the logic of events, and in the providential guiding of the affairs of the nation. Who would dare think himself unequal to it?

"To clear from human eyes the dust,
To melt from human hearts the crust,
To cleave from human wills the rust.

Truth's trump to blow so fast and high
That hurrying notes leap out and fly
Here—there—and all across the sky."

"NEED HE HAVE DIED?"

BY E. L. TRANSEAU

WHEN the death of a man in the prime of life is announced," says Sir Victor Horsley, in a recent work, "the first thought ought to be, 'Need he have died?' In the large majority of these cases, a little investigation will show that what should have been a normally resisting heart, has been weakened by daily habits and social customs."

This observation is made in connection with the consideration of the way in which the heart and other parts of the circulatory system are injured by the beverage use of alcohol. He says:

"Those who have taken alcohol in small

influenza or pneumonia comes upon them, their hearts being below par. This loss to the community is incalculable."

THE PATHOLOGICAL "PICTURE"

Objection has been raised, with perhaps some justice, against presenting to young children descriptions of pathological conditions caused even by every-day habits which ought to be corrected. On the other hand, the teacher's assertions that certain practices should be avoided are often met with the exclamation, "But my father does it, and it does not hurt him!" This objection is particularly liable to be raised in the case of alcohol or tobacco, because the effects are so long hidden.

In such a case, the teacher is challenged to produce proof. How much it will take to



"A Song! A Star! A Child! A Hope! A Light! A Life!
And angels chant of joy for pain, good, will for care and strife."

quantities for years often notice in themselves an absence of energy, and their vigor and freshness returns only after a few months of abstinence, during which time the heart gradually regains its tone.

"It is probably not realized by many that very small doses, constantly taken, ultimately cause an effect on the heart. The result of such depression of the efficiency of the heart with many is that when they are attacked by some disease they succumb to heart failure, instead of being able to hold their own and recover from the illness. This probably accounts for the great number of deaths in men between forty and sixty years of age, men who ought to live to a good old age, but who are heavily handicapped when a disease, such as

secure conviction will depend upon circumstances. But the teacher who does not wish to retire defeated from the discussion will be well equipped beforehand with exact knowledge. Such knowledge is necessary in order to avoid exaggeration, as well as to lodge conviction.

The pathological "picture," as the Germans call it, of the abnormal conditions of the circulatory system caused by alcoholic drinks, is easily reduced to a few main outlines: the trouble in the heart, enlargement, inefficiency, fatty degeneration; in the blood vessels, enlargement and degeneration; in the blood, crippling of the white blood corpuscles and reducing the power of other constituents needed in combating disease.

THE "STIMULANT" AND "TONIC" FALLACIES

Instead of looking upon alcohol, in moderate amounts, as a cause of heart disease, it was long regarded as a heart stimulant and tonic. Like the old idea that the world was flat, these conceptions arose from superficial observation, and could only be corrected by exact investigation. In the results of that investigation lies also the clue to the beginning of heart trouble caused by alcohol.

Sipping a glass of water slowly will cause the heart to beat faster, because the effect upon the nerves in the mouth, throat and stomach acts reflexly upon the nerve mechanism of the heart. Likewise, an alcoholic liquor thus sipped causes a slight increase of the heart's action. But "if the person be at rest and all sources of excitement avoided the effect is very short." (1) Once absorbed, another effect sets in, the paretic, or weakening effect upon the vaso-motor system. The muscular fibres of the heart and vessel walls relax and the blood paths widen. "The large bounding pulse which gives the deceptive appearance of vigor and force in the circulation is due to the large wave in the dilated vessels." The heart's energy is wasted in pumping blood into relaxed vessels.

Among the most recent investigations showing the weakening effect of alcohol upon the heart muscle itself, is the work of Dr. Bachman, of Upsala, reported at the recent International Congress at Stockholm. He experimented upon living mammalian hearts that had been "isolated," or separated from their nerve connections, using for the purpose very weak solutions of alcohol, from .5 per cent to .0025 per cent concentration. He found that wherever it was used in sufficient amounts to produce any effect, it caused either a temporary irregularity or a brief diminution of the strength of the contraction.

THE PICTURE IN THE HEART

Instead of being a tonic and strengthener, alcohol is found, upon exact investigation, to be a cause of relaxation and weakness. The relaxed and weakened heart muscle tends to dilate. The dilatation may be sudden or gradual. If the owner leads an uneventful, uniform life, the heart simply contracts with less and less force and thus fails to empty itself completely with each contraction. To accommodate itself to the pressure of the consequent overfulness, it begins gradually to stretch. When the walls have stretched beyond a certain point, the valves can not close tightly, and each contraction causes some of the blood in the heart to flow back into the veins, instead of into the arteries.

When this stage is reached, the trouble spreads beyond the heart to other organs. The liver, stomach, spleen and other parts are somewhat in the position that a house standing close to the edge of a stream would be in if some one should build a dam just below, causing the water to rise.

This back-flow of the blood leads, besides, to a partial stagnation of the blood all over the body. Nourishment is brought in and waste carried out more slowly. Among the tissues that suffer from this malnutrition are those of that very heart itself that is already staggering, so to speak, under the load made heavier by its own weakness.

The muscular walls of the heart, failing to obtain sufficient nutrition, undergo a chronic form of degeneration in which the muscular fibre is lost, and replaced by fatty tissue. (2)

THE BEER HEART

It is not alone large quantities of alcohol that produce heart disease, for as Dr. James Barr tells us, the long continued use of the drug, even in moderate quantities, leads to fatty degeneration of the heart muscle. Neither is it necessarily "strong drink"—that is, spirituous liquors. In Bavaria, an increase of heart disease has kept pace with an increase in the use of beer, especially among children.

Beer has given a specific name to one form of heart disease—the "beer heart." This is the immensely enlarged heart which has struggled to keep in circulation the abnormal amount of fluid the beer drinker has poured into his stomach. While the typical heart of this kind is found most frequently in the heavy beer-drinking sections of Germany, such as Munich, where every sixteenth hospital patient is said to die of beer heart, it is well known in more or less modified form to the physicians of the large hospitals in Europe and America.

THE PICTURE IN THE ARTERIES

Relaxation and weakening of muscular tissue is not confined to the walls of the heart. Those of the blood vessels also become weakened, abnormally dilated in some places, "pouched", and in time degenerated. The "picture" presented under the microscope shows an increase of the fibrous tissue of the vessel walls sometimes accompanied by deposits of fat, "fatty degeneration," or even by deposits of earthy matter, i. e. "pipe stem vessels." Earthy deposits occur especially in tissues in which the vitality is lowered. This form of vascular disease is now recognized as having in alcohol one of its most important causes. (3)

The thickening of the vessel walls leads to lack of elasticity, a condition which ought normally to come on only with old age. Its relation to the possessor's "span of life" is signified by the well-worn saying, "A man is as old as his arteries."

These senile changes in the arteries are brought on, it is figured, from ten to twenty years sooner than they would otherwise occur. (4)

To accord with the facts, the old phrase, "Wine is the milk of old age" must be changed to "Wine is a producer of old age."

The process of thickening in the arterial walls progresses slowly with some people, with others more rapidly. As it advances, the walls become less able to withstand pressure. (5) Any occurrence which causes a sudden increase in the heart's action is liable to give rise to a rupture of the "pouched" vessels in the brain. The hemorrhage then resulting and the pressure of the escaped blood clot upon the communicating nerve fibres is the cause of paralysis.

While, with due care, catastrophe from sudden strain may be warded off, it is otherwise with danger from the lurking disease germ. Pneumonia, which taxes the stoutest hearts, is here almost surely fatal. Typhoid fever, influenza, surgical operations, and accidents carry off many who might have recovered if not thus handicapped.

THE PICTURE IN THE BLOOD STREAM

It is now proved that alcohol, even in tiny doses, paralyzes more or less the white blood cells, and to that extent hinders their microbe-destroying function. (5) It renders them less alert, so that they remain passive and motionless in the presence of dangerous microbes which it is their office promptly to destroy. Besides, it hinders the formation in the blood of substances which assist in germ-destroying, and it hinders the establishment of immunity against special diseases through vaccination and inoculation.

It has also been proved that alcohol reduces the alkalinity of the blood, and this in turn is unfavorable to the oxidative processes in the cells, processes that need to go on with even more activity when disease toxins are to be eliminated, than in health.

AUTHORITIES REFERRED TO IN THE TEXT

- (1) Barr. (2) Arnold. (3) Woodhead. (4) Adam. (5) Horsley.

NOTE. Use the following story in lower grades to teach self-control. Show how conscience warns, the wisdom of not dallying with temptation, and how saying No when tempted gives self-command.

THE CLOSING OF SANTA CLAUS' DOOR

BY ANNE WARNER

THE door was partly open! Henry stood petrified at the sight. That door had been closed for three days. Mysterious noises had resounded from behind it. Papa, Mamma, and Aunt Bertha slipped in and out of it in a suspicious manner. The door was *always* closed. And now it was open—that is to say, it was partly open.

And to make things worse, right in the opening lay a little sprig of Christmas greens. Christmas was coming in three days. Santa Claus was going to bring it. Santa Claus



"One could not possibly do justice to all that was on the tree."

brought everything—"Santa Claus is bringing Christmas now," he thought, "and he is putting it in that room, and the door is open, and I can look."

It was cold in the hall and fast growing dark. Nurse was rocking Phillis to sleep in the nursery above. Henry had been sent down to stay in the sitting-room, and now here was the open door blocking his path.

It seemed to him quite proper that he should look through that generous crack—only something prevented.

The something not only prevented his taking one step farther down the hall, but it also made his heart beat very fast and his little face burn hotly. What could it be?

He clasped his small hands tightly together and tried to think it out. "It isn't wrong to look," he said to himself, "because Santa Claus left it open, and of course, if he left it open, he knew that any one could look."

But even this reasoning did not advance his feet one step. Only his heart beat faster and faster, and his forehead grew hotter and wetter beneath the thick, soft curls.

Just then an odd thing happened. In the fast-fading light a little mouse scampered down the hall, past Henry and past the door. He noticed how the little mouse had not stopped one second by the open door.

"He just ran right by," thought the boy, "and I will just run by, too." And he covered his eyes with his hands and rushed forward past the open door, landing two seconds later in the cheerful sitting-room where Aunt Bertha was placidly knitting.

"Why Henry!" said his auntie, "What is the matter?"

"Nothing is the matter, Auntie," he tried to say, and then to his own great astonishment, his chin quivered, and he burst into tears.

"Tell me all about it, darling," Aunt Bertha said, gathering him into her arms, but Henry only asked:

"Auntie, when you want to do something and something stops you, what is it that stops you?"

"It is your conscience that stops you, Henry," she said.

"And must you mind it?"

"Always," said Auntie.

He was silent for a minute or two and then he slipped down from her knee and went out into the hall again.

It was quite dark there now, and the only light that there was shone through the crack of the opened door. Step by step he approached it until finally his hand rested on the panels.

Slowly, very slowly, the little hand pressed and pressed, and after a few seconds the door yielded and closed softly.

Then Henry turned and retraced his steps to the sitting-room.

Aunt Bertha was gone for a minute, and when she came back she found him sitting close to the fire, his chin in his hands and his elbows on his knees. He looked up at her and smiled.

"Henry," she said, kneeling down beside him on the hearth-rug, "it's a fine thing to be an American gentleman."

Henry didn't quite understand. "But you're not one," he said. "No, but you are." "Am I, Auntie?" She nodded.

Outside the sleigh-bells were ringing. Papa

and Mamma were returning from their drive. The next minute they both came into the room and whom should they have with them but Grandmamma!

"Merry Christmas, Henry!" said Grandmamma, as he ran to hug her.

"But it isn't Christmas yet," said Henry. "I know, because I'm marking my calendar."

"I think you must have forgotteen to mark it some days then," said Grandmamma, "because this is Christmas eve."

He was quite dumbfounded. That meant that directly after his tea the mysteries beyond the door would all be thrown open to him. You can imagine how much appetite he had for his tea under the circumstances. And now comes the really wonderful part of my story.

I could not possibly do justice to what *was* in that room when every one entered it after tea that night. There was a Christmas tree, also toys, books, and pretty nearly everything. But in front of all was a splendid horse with a spring so fastened under him that there was no comparison whatever between his motion and the old-fashioned rocking-horse. And tied to his neck was a letter with a big red seal. Papa read it aloud. It said:

MY DEAR FRIENDS:

In my hurry this afternoon I rushed off leaving the door open. When I came back to light the candles on the Christmas tree I found the door shut. The fairies tell me that whoever shut the door did it to help keep my Christmas secrets inside, and I am very much obliged to him or her for so doing. I desire to present this horse to whoever shut the door. Please inquire for the name.

Yours most truly,

SANTA CLAUS.

"This is very remarkable" said Papa. "Who can have shut the door? Did you shut it?" he asked Aunt Bertha.

"No," said Aunt Bertha, "I was in the sitting-room."

So Papa asked everyone in the room, one after another. Henry was the youngest present, so he was the last asked. He was so excited that he could hardly speak.

"Henry, did you shut the door?" his father said.

"Yes, Papa."

Henry had his arms around the horse's neck and the happy tears stood on his long eyelashes. He looked at them all in a sort of speechless rapture and they all looked at him.

"I will run just like the mouse always," he said earnestly, "and I will go in the dark and shut *all* the doors."

"God bless him!" said Grandmamma. —(For reproduction.)—*Delineator*.

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.30 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation
SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"Let sinned against and sinning
Forget their strife's beginning
And join in friendship now.
Be links no longer broken,
Be sweet forgiveness spoken
Under the holly bough."

THE HEART OF CHRISTMAS

DOWN through the ages, the coming of a child has been hailed as one of the most precious events of life. Helplessness, sacrifice, the coming long years of patient labor necessary to its rearing, are all forgotten in the joy of welcoming the little life with its possibilities for good.

The divine vision often becomes dim amid the strife and sin of maturity, but at the cradle of the child, we catch a fresh glimpse of a chance for nobler manhood and womanhood, for the perfect fruitage of the flower of sacrifice, for the hastening of the day when all will become "as little children," for "of such are the kingdom of heaven."

What we perceive but imperfectly of all this at the advent of every child is, in reality, the message of the Christmas-Child of two thousand years ago. The brightening hope of the triumph of unselfishness, the impulse toward growth into the divine likeness, the sense of the ever-renewed opportunity to be born again into the life of love and goodwill,—this was the message brought to men by the Christmas-Child. This is the heart of Christmas beneath its superficialities and extravagances. It is this that makes the world young again in the Christmas days. It is this that makes so infinitely and mysteriously precious through all the years the cares and joys of fatherhood and motherhood, the opportunities and relations of the teacher.

The Christmas-Child revealed the radiance of love and the divine heights possible to human development. The Christmas-tide strikes

the keynote of the year for that melody of the ever-broadening unity of mankind whose gracious notes fell on earth's weary hearts in the first Christmas Greeting, "Peace on earth, good-will among men."

CIGARET USING—WHOSE THE RESPONSIBILITY?

A SCHOOL or a town in which the use of cigars by school boys is a negligible quantity is as rare as it is gratifying. From east and west, from north and south, especially from the cities and larger towns, come accounts of the ravages which tobacco in this form is making among boys from sheltered homes as well as among the boys of the street.

That the evil is a great and growing one is everywhere recognized, and everywhere is a remedy sought.

Speaking of this question recently, a teacher in whose town the schools were honeycombed with the vice, said, "We believe it is the business of the home to train boys to avoid cigaret-using."

This was a truth, but not the whole truth. Parents may, indeed, and ought, to do all in their power along these lines, but for the greater part, even the most conscientious parents are unable to do more than to give moral instruction. Certainly children should be taught that their bodies are the temples of God, the defilement of which by enslaving drugs is truly sacrilegious, and we believe that parents as a rule try to do this. But all too often the result is that the moral instruction, unsupported by the reasons *why* tobacco is harmful, and why men who have used the weed a long time *appear* to have suffered no injury, does not sufficiently satisfy the boy's reason, and under the stress of temptation at school or on the street, he succumbs and forms the habit secretly.

The saving of the boy is not alone the business of the home; it is also the business of the school, because even one bad boy is able to hamper all its work. It is the business of the town, for one boy with qualities of leadership may poison the minds of half the boys in the town. It is the business of the state, for morally corrupt voters may drag her fair name in the dust. And above all, the physical, mental and moral well-being of the boy is the business of the race, for that which degenerates the body and mind and degrades the high ideals of our boys, is also throwing the shadows of race suicide athwart the lives of those who are to be the fathers of the next generation.

This view of the question has already impressed itself upon many of the great statesmen who are lovers of our race. They have realized that since the state has a direct and far-reaching interest in the welfare of every boy and girl, it is therefore, under obligation to give them the knowledge which can save them from degeneracy. Hence they have passed laws requiring that the children be taught in school the positive virtues of a sound body and be given the no less necessary warnings against tobacco and alcohol.

Accordingly, it is clear that while Holy Writ has decreed that parents shall train the child in moral rectitude, the state has decreed that the school shall forewarn and thus forearm him against those insidious temptations to drug-degeneracy which lurk on every hand.

The home, the town, the state, the race, are looking to the school for a splendid fulfillment of this trust.

We believe that many schools are facing this responsibility squarely.

Two methods are open to them. The first, a preventive measure, is mandatory in all

our land. It is the thorough, dispassionate teaching of the laws of health, including and emphasizing those which teach the nature and effects of tobacco and other narcotic drugs. This must in no case be neglected.

The second, or remedial method, would not often be necessary if the first had been in complete operation long enough to influence the older generation. Unfortunately, this is not often the case. Many fathers are slaves to tobacco; young college men, the heroes of younger boys, and some teachers, smoke and thus by their influence do incalculable harm.

Often the warning teaching, which might have saved many, has been neglected or the environment has been specially bad, and a number of boys are already "cigaret-fiends." What can be done?

What was done by a few earnest teachers in the city of N—, and the success that attended their efforts, is told in another column. It is a method which may be adapted to similar conditions by teachers or anti-narcotic workers in almost any locality. Try it.



A COOPERATIVE PLAN FOR ELIMINATING THE CIGARET

WHEN in the city of N—, in a certain school of about 500 pupils, grades up to the ninth, it was found that the boys were inferior in every way to the girls, the teachers began to look for an explanation. Investigation showed that except in one point there was little or no difference in the every-day habits of the sexes. A large majority of the boys were habitual cigarette smokers. It is significant to note that the principal and superintendent previously in charge of this school smoked.

A careful investigation extending over several months was made. Twenty non-smoking boys were chosen by lot and these were compared with an equal number of "cigaret fiends," boys out of as good families, trained under the same teachers and with other general conditions practically the same. The results of these impartial and accurate observations of the two sets of boys were carefully tabulated in parallel columns, and showed among other things, these facts:

Of the 20 cigaret-smokers, 18 stood low in deportment, 12 were in poor physical condition, 6 being practically wrecks.

The tables showed further that the average efficiency of the average boy of that school who had never used cigarettes was represented by about 95 per cent, or, in other words out

of 100 such boys, 95 of them were reasonably sure of getting at least a common school education. The other side of the table showed that of the "cigaret-fiends" only from 5 to 10 per cent stood any show in school, and they were two and one-fifth years behind their own grade, and more than three years behind the girls with whom they started in the first grade.

Only one of the lot could be called a clean boy, and 10 were confirmed truants. Eighteen had a low rank in studies, only 2 were even fair—none were good, or excellent.

Five of them were notorious liars, 5 of them were known to be untruthful, while the rest were of different degrees of the Ananias class. All but one were slow thinkers. Eight were very slow mentally.

When these investigations were completed, there was no doubt about the case against the cigaret; the question was how to eliminate the evil. The teachers adopted the following plan:

The boys were called together and the facts placed before them in the plainest possible language. A longer-faced lot of boys it would have been hard to find than these that had heard the report. Then the results of the investigation were printed, signed by the teachers, and sent to parents. They also

expressed themselves to the parents as follows:

"We desire to call the attention of parents to the fact that a large majority of the boys in this city are smoking cigarets; that the boys who smoke are, on an average, years behind the boys who do not smoke and still farther behind the girls in the same grades; that the mental, moral, and physical condition of these boys is extremely deplorable and will certainly continue to grow worse unless the habit is stopped; that while the schools are insisting that this and all other unclean and undesirable habits shall not be practised in or about our school-houses or grounds, still crowds of boys are daily seen around the saloons and loafing-places of our streets, smoking, loafing, swearing, and cultivating other undesirable habits.

"We ask that parents co-operate with us in eliminating these conditions so far as possible, to the end that we may give our future generation of young men, not only an education, but healthy bodies, minds, and morals.

"We would ask parents to observe from the table given, that the cigaret smoker is already on his way to the conditions which indicate crime, trampdom, the jail, and general worthlessness. Memory goes first, closely followed by low deportment, low rank in studies, bad physical condition, and general degeneracy.

"We would also point out to parents that while pupils are within our domain as teachers (the school yard and school house) there will be no smoking, and that while we shall do all in our power to discourage it anywhere, we are helpless to stop the difficulty without the personal co-operation of the parents, and we may as well add that we are unable to teach anything to the cigaret-fiend, as his memory is a blank, his power to reason damaged, ability to study ruined, and usually his ambition to excel entirely gone.

"We would further point out to the parent of the boy who smokes, that the desirable places in the business world are being rapidly closed to the cigaret smoker, and that already the banks, railroads, and many other businesses by which the ambitious young man expects to climb to fortune and success have closed their doors as tightly to the cigaret-smoker as to the drunken sot. Why? Because the business world has found by experience, as we teachers observe continually, that the cigaret-smoker is untruthful, deceitful, untrustworthy and inefficient."

This was plain talk and it had an imme-

diat effect. Within a few months it was estimated by the marshal of the town that seventy-five per cent of the cigaret-smoking by boys had stopped and the moral and industrial condition of the school was wonderfully improved. What had been called the worst school in the county was spoken of as doing good work. The school board raised the salary of the teachers and principal twenty-five percent. The people were pleased and the improved condition of the boys was noticeable in their language, dress, manners, efficiency, and in their moral tone. —Adapted from *Teacher's Institute*.



"The Christmas bells from hill to hill answer each other in the mist."

CHRISTMAS GREETING

A merry Christmas morning
To each and every one!
And may the Christmas splendor
A joyous greeting bear
Of love that's true and tender,
And faith that's sweet and fair.

O merry bells! this Christmas day,
How loud and clear your ringing;
Such love and mirth o'er all the earth
Your trusty voices flinging.

O bells of God, ring on, our souls
To grander action stirring;
Till all our days are Christmas days
Of loving and of serving.—*Selected.*



Primary Lessons

THIRD YEAR

THE BRAIN AND NERVES

Self-control is one of the most important lessons for the child to learn, affecting, as it does, not only his work in the school room but his character as an individual and as a future citizen. Some knowledge of the brain and the work it does in receiving and sending messages to every part of the body will help him to realize his own responsibility in deciding what these messages shall be. For the convenience of the teacher the subject-matter has been broken up into lessons. See story page 53.

LESSON I

DIRECT the children to sit with both hands on the desk in front of them, palm down on the desk, fingers spread out. Tell them to raise one finger at a time keeping the rest down on the desk, but that they must decide which finger to raise. You will not tell them.

The brain directs. Ready. Willis raised the forefinger of his left hand. What made that finger come up, Willis? I did not tell it to. Try again some other finger and notice very carefully what happens just before the finger comes up. (Repeat until all or most of the children discover that just before the finger is raised they think about raising that particular finger.) Ask them to make some movement with the whole arm and to notice what takes place just before the movement is made.

What is it that tells the finger or the arm to move? If the children are not able to answer, have the experiments repeated and ask them to observe in what part of the body they think about raising the finger.

We have learned that the heart, lungs and stomach are in the trunk. Now we are learning that in the head there is something called the brain and that its work is to think. We have learned that it directs other parts of the body to move. Let us see if we can find what else it does.

The brain decides. Ask the pupils to think of raising one finger but not to raise it, and to tell you what finger they thought

of raising. Ask them to think about making some motion of the arm, but not to make it, and to tell you what they thought of doing.

Mary may stand and tell you all what finger to raise, but you need not do as she tells you unless you choose. How many raised the finger that Mary directed. How many raised some other finger? How many did not raise any finger? What was it that decided whether you would do what Mary said or not?

Try another. Percy may tell you some movement to make with your arm and you may do it or not, or do something else. What was it that decided what you would do?

What two things have we discovered about the brain? That it directs and decides. Let us see if it does anything else.

The brain judges. Nellie may stand and suggest something for us all to do—anything she pleases. (Different pupils may be called upon until a suitable example is given.) Nellie proposes that we all go home. How shall we know whether or not to do as she says? What is it that must decide? But before the brain decides, it has to do some work. It has to think what would happen to our work if we should go home now. Whose brain has thought? Helen says if we should go home now we would miss our lessons. How many think it is better for us to stay and have our lessons? How many think it would be better for us to go and play the rest of the day? What kind of work have your brains just been doing? (Give the word "judging" if no one suggests it.) How many have ever heard of some man who is called a *judge*? He has to listen and think and judge what is right for other people. Our brains have to learn first of all to judge for ourselves. We will learn something more about this in our next lesson. We now know three kinds of work that the brain does.

(Let pupils summarize and write:)

The brain tells us what to do.

The brain decides what we shall do.

The brain judges what is right for us to do.

LESSON II

Recall some recent number-work in measuring or link the development of this lesson with such work. How many have ever gone to the market to buy a quart of milk? How did the grocer know how much to give you? What else have you bought that had to be measured? Suppose you should go to a store to buy a yard of ribbon, and the storekeeper should take up the ribbon and just guess at a yard and cut it without measuring, what would you say? What ought he to use?

We spoke yesterday about the work of a judge. He hears what is said on both sides and decides what shall be done. But he does not decide merely by guessing, as the storekeeper would if he cut ribbon without measuring it. He must decide according to what the law says. That is why a judge has to be a very learned man; he must know the law. The law may be called his measuring-stick.

The brain judges between right and wrong. We learned yesterday that our brains judge for us. Let us see if, in judging, our brains simply guess, or if we use a measuring-stick. (Refer to some recent physical hurt some pupil has suffered and apply the word *injury*.) Tell some of the ways in which people are injured. (Select an example.) Is it right for one boy to injure another by striking him and causing pain? If William has a new knife and Ralph takes it away from him, how does Ralph injure William? If Mabel is studying and Ruth whispers to her so that she can not study, how does Ruth injure Mabel? Yesterday, we decided that we would not go home in the midst of our lesson; would anyone have been injured if we had? Mention some other ways in which we may injure ourselves. Is it right or wrong to injure others? Is it right or wrong to injure ourselves? Now we will see if we have found a measuring-stick for our brains to judge by. Let the pupils, one after another, suggest some action, good or bad, and let others tell whether it is right or wrong, and why. Obtain the best expression of the fact that injury to oneself or others is a standard or "measure" for judging right or wrong.

The application of this standard will be a useful means of discipline on subsequent occasions for correction. The whole class may be called upon to decide according to this standard whether any act under observation is right or wrong and thereby learn self-government.

The brain the body's master. Yesterday when Henry told us all to raise our right arms, Roger's right arm did not go up. Why was that? Which is the master of Roger's arm, Henry's brain or Roger's brain? Of what other parts of his body is Roger's brain the master? What is the master of Percy's body? What is true

of each of our brains? Get the statement, The brain is the master of the body.

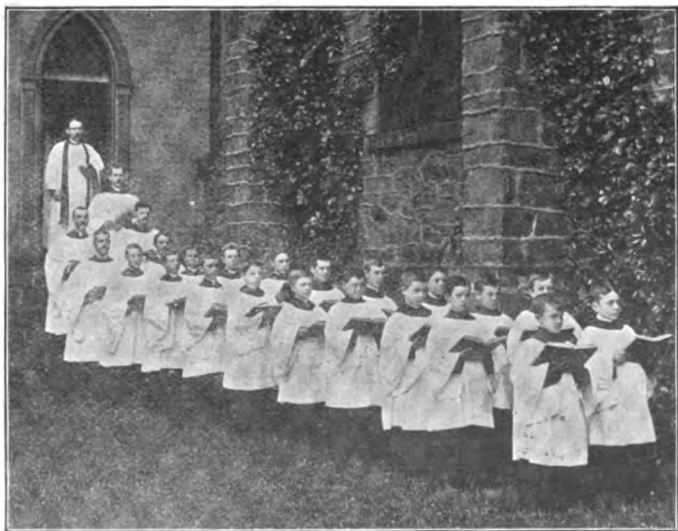
If you were a dog, what kind of a master would you choose, supposing you could choose, one who gave you enough to eat and treated you kindly, or one who starved and beat you? Dogs can not often choose what kind of a master they will have, but we can all choose what kind of a brain we will have for a master. Perhaps some of you would like to tell what kind of a brain you want to be your body's master. Guide by suggestions the mention of some desirable qualities. Show that each can have the kind of brain he chooses for a master by training and educating it.

Explain what schools and teachers, home and parents are for, to guide and train young brains and so help them grow to be wise and good masters; that often a child's brain, before it is trained and educated, would be a very cruel master; it would tell the child to do things that would bring him much trouble when he was grown up. In such cases parents and teachers have to work hard, and sometimes punish such a child in order to train his brain to be a good master.

The brain judges what is right for us to do.
The brain is the body's master.

The brain must be trained to be a kind master.

NOTE: These two lessons upon the work of the brain, if carefully developed, will not only serve to make the child think about his conduct and take an interest in the object



"Carol, children carol, carol joyfully;
Carol for the coming of Christ's Nativity."

of his school work, but it will also arouse a curiosity to know more about the brain when the time comes for him to study something of its appearance and structure.

LESSON III

There was once a king who had many enemies, so he shut himself up in a strong castle that his enemies might not get to him. But it was necessary for him to know what was going on in the different parts of his kingdom. How would he find out? (Let children suggest.) We will suppose that this king did not live in the olden time when his men would have had to go and come afoot and on horseback, but that he could use the telephone. How would he find out what was going on in a distant part of his kingdom?

How the brain receives messages. Henry may close his eyes tight. (Touch Henry's hand with some object.) Why did Henry open his eyes so quickly? It was Henry's finger that I touched. His brain is shut up in his head. It is the king in his castle. When I touched Henry's hand, how did this king know that something had happened out at one end of his kingdom? Let us see if we can find how the news reached him.

Look at the under side of your wrist. Besides the blue veins you see white cords. These cords are fastened to the muscles to help move them. They are so large that you can see them through the skin. There are other white cords which you cannot see which run down through your wrist and out to the very ends of your fingers. Some of them are finer than hairs, and there are so many of them that they go in every part of the skin. They end very close to the surface of the skin and run all the way from there to the brain. When I touched Henry's finger, ever so lightly, I touched very close to some of these nerves, and quick as a flash, the news went to his brain.

The little white cord that carried the news is called a nerve. We cannot tell just how the news is sent along the nerve but we know that the nerve has to be there, or no news is carried. You told me that Henry felt the pencil. That is true. The nerves that carry to the brain news of something felt, we call nerves of feeling. How do you know that this flower is pink? The flower does not touch you anywhere. The king, your brain, is inside his castle. How does the news get to him? Nerves called the nerves of sight carry the news. I say, "listen;" how does your brain know what I say? (Nerves of hearing.) How does your brain know that sugar is sweet? (Nerves of taste.)

That the violets have a delicate perfume?

You have already learned something about these five ways of finding out things (See page 44, November JOURNAL.) You called them the five senses. Now you may remember that the nerves that carry these five different kinds of news to the brain are all called nerves of sense.

How the brain sends out messages. Sometimes your king in his castle wishes his servants out in one end of his kingdom to do something. Perhaps he is out of food or wants them to send him some. Perhaps he has heard that an enemy is doing damage in one part of his kingdom, and he wants men from another part to go and help drive out the enemy. How will he get word to the men? When I touched Henry's finger, his eyes flew open. How did the king in the castle get the eye-gate open so quickly? If the answer is not given, refer to the exercise with the fingers and ask what directed the fingers to rise.

Henry may tell what the king in the castle learned after the eye-gate was open. What took this news to the brain? Suppose the news taken in by the sense nerve of the eye had been, "There is a mosquito on the end of the hand", what orders would have been given by the king in the castle? Show me how Henry's other hand would have obeyed that order. To make that motion with his other hand he had to use some of the muscles in his arm. There are fine white nerves running from the brain to the muscles, so that the muscles may be ordered to move whenever the brain wishes them to. Call for illustrations. These nerves are called motion nerves, because they cause the muscles to make these motions.

When you are in the street which nerves tell you that a horse and carriage are coming? Which nerves tell you to get out of the way? Which nerves tell you the bell rang? Which nerves tell you to come into school? Which nerves tell you a rose is on your desk? Which nerves tell you it has an odor? Which nerves tell you to pick up the rose? Which nerves carry the message when you wish to taste an apple? Which nerves tell you whether it is sweet or sour? Which nerves tell you there is a stone in your shoe? Which nerves tell you to take the stone out?

The sense nerves carry news to the brain.

The motion nerves carry orders to the muscles from the brain.

LESSON IV

NOTE: Explain to the children that any

sense such as sight or hearing can be made much keener by training. Speak of the Indian in this connection. If desirable, give simple exercises which will train in acuteness of sense, and in alertness. For the purpose games like the well-known "Beast, Bird, or Fish," "Simon Says, 'Thumbs Up'", etc., or making lists of things seen on the way to school or after passing rapidly around a table on which a number of articles are displayed, will prove useful.

Did you ever see a man putting up new telegraph or telephone wires and taking away the old ones? Why does he put in these new ones? (Bring out the idea that if messages are to be sent quickly and correctly all the lines must be in perfect working order.) The brain in its castle, and the sense nerves and motion nerves are much more wonderful than any telephone or telegraph lines. Can we replace them if we allow them to be spoiled? What can we do to keep this king and his messengers well and strong so that they can act promptly in receiving, sending and carrying messages? (Reinforce here the simple hygienic rules of abundance of *good food*, *pure air*, *exercise* and *sleep*.) These are the friends of our brains and nerves. Let us write their names on the blackboard.

But, sad to say, our "Henry, it is a fine thing to be an American gentleman." (Page 68)
brains and nerves have some enemies, too.

A little girl once spoke angrily to her sister. Her mother said, "You should not speak in that way."

The little girl said, "I didn't mean to. I spoke before I thought."

Anger is an enemy that sometimes troubles the king in the castle. If we let this enemy stay inside the castle he can make the brain-king do things for which he is very sorry afterward. But there is one guest that can overcome Anger, and if the king keeps this guest always in the castle with him, Anger will not be liable to give him much trouble. The name of that guest is Love.

There are some other enemies, too, that if

let into the body, may even spoil the busy work of the brain and its nerve messengers. We call these enemies alcohol and tobacco. They get in under different names. People sometimes let in alcohol as whisky, or beer or cider or wine. Tobacco goes as a cigaret or as a cigar or in a number of other ways. -

Bring out the facts that these substances tend (1) to dull the brain so that a boy or girl cannot learn so well or so quickly; (2) to make the nerves less quick and sure in carrying the messages for the many different things the body must do; (3) to make the brain and nerves want more and more of these harmful substances. Every time the brain fails to say No when tempted to do

something harmful, it makes it all the harder ever to say No to any kind of temptation. Thus the brain becomes a servant instead of the noble master of the body.

What was the measuring stick or standard we used in judging whether an action was right or wrong? (Injury to ourselves or others.) We must train our brains to keep that measure always ready for use. That means that we must train ourselves to stop and think whenever we feel tempted to do or say something that might injure ourselves or anyone else. Until we have learned to stop and decide wisely, our brain is not a good master, we

have not learned *self-control*.



SELF-COMMAND

"I do not ask for any crown,
But that which all may win;
Nor try to conquer any world
Except the world within.
Be Thou my guide until I find,
Led by a tender hand,
The happy kingdom in myself,
And dare to take command."

Self-conquest is the greatest of victories.—Plato.

Sparks from the Teacher's Andil

AT least once in four weeks, write upon the blackboard a list of questions covering fully the matter studied by the physiology class during that period. State them in a fresh, picturesque way so that they will stimulate interest and also require some study. Among them should be a majority of practical questions in hygiene, not forgetting local needs or the effects of narcotics. If a few of them are such as require observation and answers outside the regular textbook, they will add spice and encourage competition. The questions should be numbered consecutively, copied by pupils into their notebooks, the answers sought out, written in the notebooks and studied for review work.

Once in two months, or oftener, if desired, appoint the two pupils who rank highest, as leaders and allow them to "choose up" as for a spelling match. The teacher then conducts the match as a spelling match would be conducted, giving a question to each side alternately. Pupils who can not answer the questions may be seated, and the one standing longest declared the victor.

The match may also be conducted to see which side can win all the class. In this case, when a question is missed on one side and answered on the other, the captain of the answering side may call from the other any member but the captain. If, however, the question comes back and is answered on the same side it was missed, neither side scores. Hard questions may be repeated, and if the match is a tie when the questions are used up, the teacher may give others from the book.

This plan may be used in reviewing other subjects as well as physiology and will prove rapid, interesting, and thorough.

A PLEASANT variation from this method, especially if the children are younger, is the following:

Cut slips of cardboard, or better still, procure a hundred tinted bristol-board cards from some printer. These will be quite inexpensive and prove useful in a variety of ways.

Upon each of these little cards write one of the questions (numbering the cards like the questions on the board) and also a brief, concise answer. When the children have copied in their notebooks the questions from the blackboard and have written in their own answers, allow them to compare the card answers with those they found, correcting where necessary.

At a regular lesson period or when reviewing, ask the questions in rotation, and pass

the card to the pupil if he answers correctly. If he fails, the card goes to the first one giving a correct answer. Continue rapidly allowing no hesitation, till all the cards are disposed of. The pupil holding the largest number of cards wins.

To insure the more careful study of difficult or important questions, divide them into as many classes as there are colors of cards. Write those of the first rank on the prettiest cards, and place a figure in one corner representing a certain number of points; the questions of the second class are placed on the next most attractive cards, and a figure representing fewer points placed on these; the least important questions rank lowest. Care should be taken to number the entire series in such a way that all pupils will have an equal chance to secure cards of high rank.

When the cards are all given out the pupil holding cards representing the greatest number of points wins. Records may be kept for a time and thus the slower ones spurred on or at least encouraged. After all, it is the ordinary or slow pupils who most need such helps as these and the extent to which the teacher can arouse these pupils and lead them to strive for higher ideals in scholarship and in living, marks the real and lasting value of her work.



WE HAVEN'T MET HIM.

Little Boston Boy—"Mother, I told Santa Claus that he needn't trouble himself to make his usual donations to me this season."

Mother—"What do you mean, Epaminondas?"

Little Boston Boy—"Mother, he has worn his old fur overcoat such a long period that I feel assured it must be infested with pernicious microbes."—*Detroit Free Press*.



A GOOD METHOD

There was once a little school ma'am

Who had this curious way

Of drilling in substraction

On every stormy day.

"Let's all subtract unpleasant things,

Like doleful dumps and pain,

And then," said she, "you'll gladly see

That pleasant things remain."—*Exchange*.

"While all cannot be merry, all may be cheerful, helpful, kind."

High School—Circulatory System

In taking up the circulation, first bring out the fact of the real unity of the structure and function of the organs of the body, studying the cell as the unit. If feasible, direct the class in the study of the amoeba as to structure, movement, feeding, digestion and metabolic processes, circulation, taking in of oxygen, excretion, sensation and reproduction. Compare the ordinary body cells and also the white blood cells with the amoeba in these respects. Note the remoteness of most cells from the organs which are the sources of supply for their needs.

Review the processes of digestion and assimilation, bringing out clearly the relation between them and the circulation of blood, thus leading up to the discussion of the subject proper which may be considered under the following heads:

I. WORK TO BE DONE

1. Supplying the cells with (a) nutrition for energy, sustenance and repair; (b) oxygen for breathing; (c) means of disposing of the wastes due to their chemical activities.
2. Supplying necessary means by which the body can (a) repair the results of accidents, and (b) defend itself from bacterial invaders.

II. THE MEDIUM—BLOOD AND LYMPH

1. Blood:
 - a. Composition:
 - (1) Plasma, (2) fibrin, (3) red corpuscles, (4) leucocytes, (5) blood plates, (6) blood complement. Origin, nature and use of each so far as known.
 - b. Work of blood:
 - (1) A common carrier between organs and outer environment; (2) stage on which is fought many a drama of life and death.
2. Lymph:
 - a. Composition,—similar to blood, minus the red corpuscles;
 - b. Work,—the middleman between the living cells of the organs and the nourishing blood.

III. THE METHOD—CIRCULATION

1. Produced by: (a) heart action, (b) difference in pressure in blood reservoirs, (c) arterial propulsion and, (d) secondarily by suction from deep breathing and squeezing due to muscular contractions.
2. Adjusted to needs of every day life by control of reflex nervous system.

IV. THE MACHINERY—ORGANS

1. Heart, double pump (why?) which has automatic action regulated and controlled in part by inhibitory and accelerator nerves; 2. Arteries; 3. Veins; 4. Capillaries; Structure and use of each.

V. HELPS TO THOROUGH WORK

1. Sufficient sleep during which the heart rests somewhat.
2. Deep breathing which facilitates circulation in the abdomen (a) by squeezing important veins and lymphatics, (b) by suction which quickens the flow of lymph and blood from organs outside the thorax.
3. Muscular exercise which (a) increases the number and strength of the heart beats thus exercising the heart and strengthening it as any other muscle may be strengthened; (b) increases the circulation by compressing the small blood and lymph vessels; (c) causes deeper breathing and hence better oxygenation and removal of fatigue poison. ("Freshening" effects of muscular exercises are largely due to improved lymph circulation in the tissues which is felt in the immediate environment of almost every cell in the body.)

VI. HINDRANCES TO GOOD WORK

1. Compression of any blood vessels in waist, abdomen or neck.
2. Impure air which prevents proper aeration of blood.
3. Lack of sufficient exercise to keep the heart muscle in tonic condition. (Breathlessness from exertion is often due to this cause, and indicates clearly that the weakness thus made apparent must be gradually removed by carefully selected exercises which will tone up the heart to its normal strength.)
4. Use of tobacco; and especially of cigarettes, which (a) attacks the heart causing palpitation, weak and intermittent pulse, etc., (b) poisons the blood by means of the nicotine absorbed by mucous membranes, and by inhalation of that and other poisonous gases.
5. Use of alcohol which (a) interferes with the processes of supplying food material and oxygen to the tissue cells and also with the elimination of waste substances; (b) tends to dissolve or change the superficial layer of the red corpuscles and to damage the underlying structure of the cell, the repetition of which damage leads ultimately to more or less anaemia; (c) injures the leucocytes so that they cannot act so quickly or certainly in destroying disease germs; (d) injures the fibrin so that the blood clots less quickly when bleeding occurs; (e) irregularly but distinctly reduces the blood complement without which it appears to be impossible for any certain immunity to disease to exist; (e) causes thickening of arterial and capillary walls which hampers to a grave extent the nutrition

of the body and brings on deterioration of the arterial walls similar to those changes which come from old age; (f) causes fatty infiltration of the heart.

VII. EMERGENCIES—HOW MET BY THE BLOOD

1. Accidents to tissues repaired by (a) deposits of an extra amount of materials as in case of broken bones; (b) by leucocytes surrounding and forcing out offending materials, as slivers, in the flesh.

2. Loss of blood from hemorrhages, from wounds, etc., (a) stopped by formation of clots (How does alcohol hinder?); (b) restoration of volume of blood by great absorption of fluids from all parts of body and rapid manufacture of red blood corpuscles. (Where are the latter made?)

3. Bacterial invaders (a) destroyed by leucocytes and germicidal power of blood; (b) by production of anti-toxins; (c) by permanent immunity to certain diseases; (How does alcohol interfere with these processes so necessary to the saving of life?)

NOTE—For references see article on page 51 of JOURNAL; "*Alcohol and The Human Body*," by Horsley and Sturge, Chaps. XI-XII—"Effects of Alcohol on Heat, Blood, and Circulation." *Town and City*, Gulick Series, Chaps. XXI to XXIII—"Some Safeguards Against Epidemics," Pasteur's Discoveries. *World's Work*, Oct., 1907. "Opsonins—A New Hope for Health," *Harper's Monthly*, July, 1907. "New Microbe Inoculation."

POINTERS

Make your lessons interesting by being full of the subject yourself.

Compare the circulatory systems of plants and of animals with that of man.

Require drawings in colored crayons showing the complete circulatory system.

Ask for stories of a red corpuscle, or of a leucocyte or of an invasion of the blood by some disease germ.

Note the circulation in thin-skinned caterpillars or earth-worms or in the ear of a cat or rabbit. These may be seen with the naked eye. If a high power microscope is available, examine sections of artery, blood constituents, etc., under glass.

Read magazine articles which tell of new discoveries in physiological field, or which throw new light on the subject under discussion. Where judicious, assign certain articles as supplementary work to pupils who may present resumes in class.

Try having pupils prepare lessons from board outlines; these give a fresh outlook and oblige pupils to think around the given subject, and call for original investigation and examination of books, etc., outside the regular text-book.

Introduce simple laboratory experiments

wherever possible. "Practical Physiology," Blaisdell Series, Hewes' Physiology, New Century Series, are particularly rich in this kind of material, and most other good text-books furnish at least a few easily prepared demonstrations.

SEARCH-FARTHER TOPICS

1. How, when and by whom was the circulation of the blood discovered?

2. Marvels of the hydraulic machinery by which about three quarts of blood passes through the various organs of the body 3000 or more times a day.

3. How is the "bore" of the arteries adapted to the varying conditions of active life and repose?

4. Why is it reasonable to suppose (what science is proving) that alcohol can not truly stimulate the heart? (The heart is a muscle and is excited to action by nerve stimuli. What is the effect of alcohol on nerve and muscle tissues?)

5. Explain how lymph is the "middle-man," and also how the circulation of the lymph is effected when it has no organ of propulsion like the heart.

6. Sir B. W. Richardson says that the human body as an engine of life—is a water engine. In what respects is this true?

7. What is the meaning of the phrase, "A man is as old as his arteries?" What conditions make them old?

8. It is claimed for certain "patent medicines" that they are necessary in the spring, or that they purify the blood. Is there any physiological basis for such claims? How can the blood be purified?

9. How are the cumulative effects of alcohol shown when a drinker contracts a disease like typhoid fever, pneumonia, or diphtheria?

10. The opsonic index is said to be a numerical estimate of the fighting strength of the body. What is meant by opsonins and by the opsonic index?



CHRISTMAS MORNING

"The bells ring clear as bugle note,
Sweet song is thrilling every throat,

"Tis welcome Christmas morning!

Oh, never yet was morn so fair,
Such silent music in the air,

"Tis merry Christmas morning!

Dear day of all days in the year,
Dear day of song, good will and cheer,

"Tis golden Christmas morning!

The hope, the faith, the love that is,
The peace of holy promises,

"Tis glorious Christmas morning!"

SOME SEASONABLE BOOKS

The question of wise and happy Christmas giving is one of perennial interest and undoubtedly no gifts can give more real satisfaction than books artistic, entertaining or inspiring, according to the tastes of the friends to be remembered.

Upon our review table we have this month a variety of attractive books from which to select. For the children are four books of unusual beauty and value, both in paper, binding and illustrations. The first, *Riddle Rhymes** has fifty-two riddles "one for each Saturday of the year" and will furnish both amusement and instruction.

The other three* are clever and delightful guessing-stories, charming tales told in quite simple words and in pictures, 500 of the latter being required in each to complete the story. Children will not soon tire of puzzling out the story of Molly, Tom and the Shetland pony in *Dear Little Sheila*, of little Ann Gay and her funny white hen in *Chicken Little* or of little Aunt Hanna, Mary and her lamb in *Mary's Little Lamb*. The last is printed in two colors. All have an educational value and might be useful to lower grade teachers or kindergartners.

"*Father and Baby Plays*"** is a book which would be appreciated by either father

or mother of young children or by kindergartners. It gives shadow, finger and climbing plays, fifteen choice, original songs with rhymes and much other material which cannot help but make childhood happier and strengthen the ties of love. Beautifully bound and illustrated.

*In Aspects of Child Life and Education**** may be found an acceptable gift for the thoughtful, earnest parent or teacher. More and more is it being recognized that the child is the hope of the race. With this increasing respect for the possibilities of the child there is the call for literature which will unravel the mystery of his mind and thus reveal the principals which are of fundamental importance in his education. For this purpose, Pres. Hall's book is pre-eminently valuable.

**RIDDLE RHYMES, DEAR LITTLE SHEILA, and CHICKEN LITTLE*, by Ella Farman Pratt; *MARY'S LITTLE LAMB*, by Edith Frances Foster; all published and sold by S. E. Cassino & Son, Salem, Mass.

***FATHER AND BABY PLAYS*, by Emilie Poulsson. \$1.25, New York: The Century Co.

****ASPECTS OF CHILD LIFE AND EDUCATION*, by Pres. G. Stanley Hall. 326 pages. New York. Ginn and Co. \$1.50 net.

The Latest Authoritative Book on the Alcohol Question

ALCOHOL AND THE HUMAN BODY

— BY —

Sir Victor Horsley, Hon. M. D., Halle, etc.
Professor Pathology in University
College, London.

and

Mary D. Sturge, M. D., Physician to the
Birmingham & Midland Hospital
for Women.

PARTIAL CONTENTS—Alcohol a Drug; Effect of Alcohol on Intellectual Processes; on the Emotions; on the Neuro-Muscular System; Degeneration and Disease of the Nervous System Due to Alcohol; Action of Alcohol on the Digestive System; Is Alcohol a Food; Effect of Alcohol Upon the Heart and Circulation; on Metabolism and Power to Resist Disease; upon Children; upon the Race. (See Sept. Journal p. 14).

ABSORBINGLY INTERESTING SCIENTIFICALLY ACCURATE AND UP-TO-DATE
INDISPENSIBLE TO EDUCATORS AND SOCIAL STUDENTS

16 CHAPTERS

370 PAGES

16 BEAUTIFUL PLATES

21 DIAGRAMS

PRICE, \$1.50 Postage, \$.15

SPECIAL OFFER

Alcohol and Human Body	\$1.50	{	ALCOHOL AND THE HUMAN BODY with SCHOOL PHYSIOLOGY JOURNAL ONLY \$1.80 POSTPAID
Postage	.15		
Journal, one year	.60		

— ADDRESS —

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Journal Premium Offers

All subscriptions must be new, not renewals of old lists. Only ONE premium given with any one list of new names. These offers do not apply to lists of names sent previous to Oct. 15. Magazines and premiums may be sent to different addresses.

ALCOHOL AND HUMAN BODY (See page 32a)	With 15 names.
	With 10 names and \$.40
given with new names at \$.50 as follows:	With 5 names and \$1.10

CLASSROOM MANAGEMENT (See page 32)	With 15 names
	With 10 names and \$.60
given with new names at \$.50 as follows:	

MAKING OF A TEACHER (See page 32)	With 10 names
	With 5 names and \$.50
given with new names at \$.50 as follows:	

PICTURE OF MARY H. HUNT, (large)	With 15 names
	With 10 names and \$.40
given with new names at \$.50 as follows:	With 5 names and \$.55

Smaller Picture (10 x 12) of MARY H. HUNT, given free with 5 new names.

School Physiology Journal Club Offers

Every group must contain the SCHOOL PHYSIOLOGY JOURNAL. Magazines may be sent to different addresses. Subscriptions may be NEW or renewals. Many more combinations for the asking.

MAKING OF A TEACHER. (See page 32)	
Making of a Teacher, . . .	\$1.00
Postage, . . .	.12
School Physiology Journal, . . .	.60
	OUR PRICE \$1.25

CLASSROOM MANAGEMENT. (See page 32)	
Classroom Management, . . .	\$1.25
Postage, . . .	.12
School Physiology Journal, . . .	.60
	OUR PRICE \$1.65

FAMILY GROUPS.	
World's Work, ‡ . . .	\$3.00
McClure's, ‡ . . .	1.00
Delineator, ‡ . . .	1.00
School Physiology Journal, . . .	.60
	OUR PRICE \$3.25

CLASS A.	
Success, . . .	\$1.00
Woman's Home Companion, . . .	1.00
American (Leslie's), . . .	1.00
Our Little Folks, (new) . . .	1.00
American Motherhood, . . .	1.00
Primary Plans, . . .	1.00
American Boy, . . .	1.00
Altruist, * . . .	1.00
	Any 1 with JOURNAL \$1.15
	Any 2 with JOURNAL \$1.80
	Any 3 with JOURNAL \$2.50

TEACHER'S GROUPS.	
Normal Instructor, . . .	\$.75
School Physiology Journal, . . .	.60
	OUR PRICE \$1.00

Normal Instructor, . . .	\$.75
Primary Plans, . . .	1.00
School Physiology Journal, . . .	.60
	OUR PRICE \$1.65

CLASS B.	
C. E. World, . . .	\$1.50
Suburban Life, . . .	\$1.50
Little Chronicle, . . .	1.50
	Either with JOURNAL \$1.70

‡Single subscriptions for full price only.

‡This combination cannot be changed.

*Altruist and Journal, \$1.00

New Scientific Temperance Leaflets

	PRICE PER 100
Social Service in the Temperance Reformation By Cora F. Stoddard, A. B.	\$2.00
Important Place of Physiology in the School Curriculum By Prof. F. M. Gregg, A. M.	1.00
The Problem of Americanizing One Million Immigrants Yearly By J. C. Jackson, D. D., Ph. D.	.75
Scientific Temperance in the First Six School Grades By Mrs. Annie W. Clark	.30
Alcohol as it Affects the Brain and Nerve Tissue By Vaclav H. Podstata, M. D.	.75
Relation of the Drink Problem to the Perpetuity of the Nation By T. A. MacNicholl, M. D.	1.00
They Want Your Money (Popular Beer Leaflet) By E. L. Transeau	.45

FRESH, ATTRACTIVE

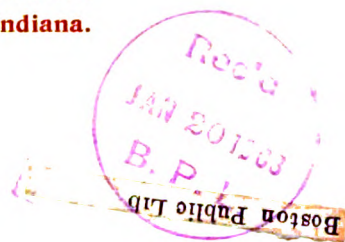
Samples of Each, only **\$1.10**

POWERFULLY CONVINCING

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

592

Why Every Young Man Should be an Abstainer.
By Hon. J. Frank Hanley, Governor of Indiana.



THE SCHOOL PHYSIOLOGY JOURNAL



PHYSIOLOGY CHARTS No. 1

THE CHILDREN OF TODAY WE SHALL HAVE SAVED THE NATIONS TOMORROW

IF WE SAVE

• CONTENTS •

	PAGE
Why Every Young Man Should be a Total Abstainer	65
An American Watchword	68
Tobacco Habit and Race Degeneracy	70
Pansy's Mother's Christmas Gift	71
Primary Lesson—Third Year—Habit	72
Editorials	74
Albert H. Plumb, D. D.	74
Grammar Lesson—Queer Crops—Beer vs. Bread	76
The Scientific Temperance Federation	79

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

RECENTLY PUBLISHED

CHILD'S BOOK OF HEALTH. REVISED EDITION

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

The author believes that the real object in teaching physiology in the lower grades of schools is to help young people to keep well and strong. Special emphasis, therefore, has been laid upon all such points as pertain to the care of the health.

How to Keep Well. Revised Edition

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition

In this edition of Dr. Blaisdell's "Our Bodies" the text has been thoroughly revised and in many parts rewritten. The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work. The statements are simple and accurate and the presentation is sufficiently complete.

An illustrated announcement of Blaisdell's Physiologies will be sent, postpaid, to any address on request.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

Milne's Progressive Arithmetics

TWO BOOK SERIES
THREE BOOK SERIES

These new arithmetics have been prepared by Dr. Milne to meet the demand which has sprung up in some quarters for a treatment of the subject upon somewhat new lines. This treatment does not, however, depart from the old and tried foundations which have gained for his previous series the widest use throughout the country.

In planning the Progressive Arithmetics, the author has preserved these older features, and infused them with new life by combination with what is best in modern methods of instruction.

Built upon a definite pedagogical plan, these books teach the processes of arithmetic in such a way as to develop the reasoning faculties, and to train the power of rapid, accurate and skillful manipulation of numbers. Each new topic is first carefully developed, and then enforced by sufficient practice to fix it thoroughly in the mind when first presented. The problems relate to a wide range of subjects drawn from modern life and industries, and the numerous illustrations always serve a practical purpose.

American Book Company

New York Cincinnati Chicago Boston

Thoughtful Men are Asking What is the Relation Between the Use of Alcohol and Mental States?

GEO. B. CUTTEN, B. D., M. A., Ph. D.,
(Yale)

Answers this question fully in

The Psychology of Alcoholism

A Summary of Research (750 References) covers whole ground of Effects of Alcohol on Nervous System, Intellect, Will, Emotions, Senses, Insanity and of Various Cures.

UNIQUE POPULAR COMPLETE NECESSARY

PRICE, \$1.50 POSTAGE, \$1.12

Psychology of Alcoholism and Journal
Only \$1.80 Postpaid.

SCHOOL PHYSIOLOGY JOURNAL

23 Trull Street, Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVII

BOSTON, JANUARY, 1908

No. 5

Resolve*

By Ella Wheeler Wilcox

AS the dead year is elapsed by a dead December,
So let your dead sins with your dead days lie.
A new life is yours, and a new hope. Remember
We build our own ladders to climb to the sky.
Stand out in the sunlight of Promise, forgetting
Whatever the Past held of sorrow or wrong.
We waste half our strength in a useless regretting;
We sit by old tombs in the dark too long.

Have you missed in your aim? Well, the mark is still shining.
Did you faint in the race? Well, take breath for the next,
Did the clouds drive you back? But see yonder their lining.
Were you tempted and fell? Let it serve for a text.
As each year hurries by let it join that procession
Of skeleton shapes that march down to the Past,
While you take your place in the line of Progression,
With your eyes on the heavens, your face to the blast.

I tell you the future can hold no terrors
For any sad soul while the stars resolve,
If he will stand firm on the grave of his errors,
And instead of regretting, resolve, resolve.
It is never too late to begin rebuilding,
Though all into ruins your life seems hurled;
For see how the light of the New Year is gilding
The wan, worn face of the bruised old world.

Used by permission of the Boston American.

WHY EVERY YOUNG MAN SHOULD BE A TOTAL ABSTAINER

By HON. J. FRANK HANLY

Governor of Indiana

I AM asked to give reasons why the young men of my country should totally abstain from the use of intoxicating liquors. As a foreword to these I pause to say to the young man who reads this that he lives in tremendous times. Men think in impossibles, and act in miracles. Existence itself is dynamic. The very atmosphere, moral, economic, and civic, is charged with electric currents of a voltage fatal to weaklings. Only men of elemental parts, whose powers are unimpaired by abuse, vice, or disease, may hope to survive. But for those who do survive the days are big with opportunity.

This makes it imperative that every young man should keep at his best—physically, mentally, morally at his best. To keep at his best, excess of every kind must be eliminated. Whatever enfeebles must be barred.

The power of physical endurance must be maintained at its maximum. Without a sound

body a high degree of such power cannot be maintained.

The mind must be unimpaired, capable of quick and accurate process, and of effort continuous and long sustained.

Moral sense must be as accurate as mental process, virile in the begetting of clear concepts and in the quality of its fibre. Will—freedom and will—power both must be possessed—freedom to will aright, power to coerce obedience and to travel unswervingly toward the goal selected. Courage, continuity of purposes, consecration, are elemental attributes of man at his best.

This nation, of all people, needs the young man at his best. Indeed, it must have him so if its destiny is to be fulfilled. It is, therefore, the young man's duty to keep himself at his best. Patriotism and self-interest demand it.

The children of the young men of today are to inherit the land tomorrow. These

children are entitled to a fair chance in life. The curse of an evil inheritance should be spared them. But this can not be unless their fathers are capable of transmitting to them the vital forces of manhood and womanhood. There can not well be keener disappointment than that of the father, who, looking upon the child of his loins, beholds weakness where he expected strength, enfeebled intellect where he had thought to find mentality, moral degeneracy where he had hoped for virility of character; nor can there be greater remorse than the father's knowledge that the blight he sees is due to his own vice and folly. To him the "poignant tragedy of the might-have-been" is ever present.

A virile offspring can not justly be expected from a parent whose vital forces have been wasted, whose blood has been systematically poisoned for years, and whose appetite has mastered his will. Free institutions will not be safe in the hands of such a race.....

Duty to the woman he marries, whom he calls by the sacred name of wife, who bears his children, and in whose arms they are cradled and at whose breast they are nourished—her happiness and the love in which she holds him should impel him to keep at his best.

The obligation he owes to his fellows, the good or evil that will come from his example, the influence of his life as a suggestion to those about him, and the welfare of his own immortal soul make it essential that he shall everywhere and at all times keep at his best.

The use of intoxicating liquors, if persisted in, absolutely precludes any man from keeping at his best. Alcohol is a protoplasmic poison. It injures every essential organ, and impairs every vital function of the human body. It robs the blood of its highest life-giving properties, produces abnormal heart action, causes the accumulation of waste products, effects the degeneration of the muscular cells and of the arteries, and brings paralysis to the nerve-centres. Its "affinity for the central nervous system is constant unto death." It creates soon or late a definite diseased state which makes the body susceptible to septic infection, and especially so to attack by acute diseases. It is a powerful factor in the production of tuberculosis, the dread scourge whose ravages appall the race. An eminent authority declares "the most vigorous man, who becomes alcoholic, is without resistance before it."

Clinical experience, experimental research, and observation in the post-mortem room and pathological laboratory have established the connection between alcohol and impaired phy-

sique as an accepted and irrefragable fact. It is said that five percent of the total deaths among adults are due directly to its use. This estimate does not include the deaths caused by disease in which intoxicants are a substantial factor.

That alcoholism shortens life and that abstainers have a distinctly greater longevity than non-abstainers is convincingly demonstrated by actuarial experience. The testimony of certain English life-insurance companies, based upon many years of experience, establishes the fact that the longevity of abstainers is at least twenty-five per cent. greater than that of non-abstainers.....

Six per cent of all accidents, twenty-five per cent of all suicides, seventy per cent of all crimes involving physical violence, and fifty per cent. of all of those in which lust is the dominant factor can be traced to the excessive use of intoxicants.....

Alcohol is essentially a poison to the brain and nerves. It breaks down the tissues of the brain, interrupts the transmission of sensation, breaks the communication between nerve cells, produces mental aberration, inability, and incompetence, dethrones the intellect, overthrows the mind, and becomes a direct or indirect factor in the causation of at least thirty-five per cent of all insanity.

It begets moral turpitude, establishes a relaxed standard of duty, and leads to moral obliquity and degradation.....

Its continued use means individual inefficiency, drink-cursed progeny, national deterioration, and racial decadence.

Briefly told, these are some of the effects of intoxicating liquors on body, mind, and soul. In the words of an eminent English physician, "they produce weakness, not strength; sickness, not health; death, not life." Lest it be suggested, however, that the facts I have presented are reasons why excess should be avoided, and not reasons for total abstinence, I have an after-word which I would that no young man should forget.

No man ever began the occasional use of alcohol as a beverage with the fixed purpose of becoming a drunkard, and yet we count drunkards by multiplied thousands. Every one of them counted upon his indifference. He trusted his will power. He found both weaker than he thought, and he lost. It is well here to remember that few persons addicted to the drink habit ever became sober through sheer strength of will. The will is too inconstant and too human to be safely put to such a test. When it fails, the consequences are too far-reaching and too disastrous to be hazarded on so uncertain a premise.

The beginner is always confident of his own self-control. An occasional drink can do no harm. He can take it or let it alone. Its use will never become a habit with him. He can do as he wills. Hence there is no danger.

Just here is his peril. He does not know himself. There may be latent weaknesses of which he has no knowledge; unaroused cravings the power of which he has never tested; inborn instincts, strong as threads of steel, of which he is not conscious. He does not pause to estimate the strength of a want not yet acquired. He does not understand that habit is at the root of every vice, the ease with which it overcomes indifference, or the tyranny with which it rules the will when once its foot is in the stirrup.

His system, through heredity or other causes of which he has taken no account, may utterly lack the power to resist the evil effects after he has imbibed. In certain temperaments and in nervously constituted individuals even the smallest indulgence may arouse inclinations and weaken the inhibitory powers of indifference and of will, until ruin follows, swift and sure. Occasional indulgence becomes frequent. The will is powerless to oppose, and the victim unable to abstain even from the grossest excess.

But, even though excess could with certainty be avoided, every young man should still be a total abstainer. Alcoholic drinks are harmful even when taken in moderation. It is not safe to undertake to measure moderation. There is no accurate definition of excess. In the very nature of the case there can be none. The quantity which will make one person actually ill may have little apparent effect upon another.

We may not sin against the laws of health even in moderation without penalty. The influence of alcohol upon the nervous, mental, and moral economy of a healthy man is always evil, its varying degree depending upon the quantity taken. It penalizes in some degree every man who uses it. It loans temporary strength only to enforce payment with usurious interest. Like Shylock, it will have its bond, though payment impoverishes.

But, even though a particular individual could trust his own will power with absolute reliance, every young man ought still to be a total abstainer. No man lives unto himself alone. Whether he wills it so or not, he is one of the units of society. Whatever he does affects others. He may not measure the consequences of his acts solely by their effect upon his own personal life. The power of suggestion is tremendous. Example tells. In

some degree every man is his brother's keeper. He himself may escape occasional indulgence without ruin, but the acquaintance or the friend who follows his example may not. Every non-abstainer, through the force of example, takes on his soul the risk of another's blood. The total abstainer never.

I hold it to be the imperative duty of the strong to forego their own personal liberty in this regard, even as they daily forego it in other lines of conduct, for the protection of the weak and indirectly for the protection of society and of themselves, from the countless crimes of drunkenness.



"Aggressive fighting for the right is the greatest sport the world ever saw."

If we as a people are to maintain our health, our morals, and our sanity; if we are to reach the high state of efficiency the times demand, and are to fulfil the destiny among the nations of the earth which is justly ours, the young men of the country must meet this question and decide it aright. The mandate of his religion makes the Mohammedan a total abstainer. It seems to me the religion of the Christ ought to do as much for the young men of America.—From *Christian Endeavor World*.*

*See combination club offer.

AN AMERICAN WATCHWORD

BY E. L. TRANSEAU

IN April and May 1906, between eighty and one hundred thousand people gathered daily, for ten days, in the classic city of Athens, around a reconstructed ancient stadium, to witness a twentieth century revival of the Olympian Games.

Nine hundred and one contestants, representing 20 nations were there to compete for prizes. Of these 298 were Greeks, 73 French, 66 British, from all parts of the Empire, 57 were Swedes, 56 Danes, 44 Norwegians, 43 Americans, with less numbers from the remaining countries.

When a contest was finished, the national flag of the victor was raised to show what country's representative had won. And the flag, that went up oftenest was the Stars and Stripes. One day, three American flags flew up in succession, announcing that Americans had won the three prizes, 1st, 2nd, and 3rd, in the standing broad jump.

EFFICIENCY IN PHYSICAL ACHIEVEMENT

When the games were ended and the points counted, America, with only 43 representatives out of 901, had scored 75 5-6 points out of a total of 206. The list of the points of the winning nations stood:

America	75 5-6
Gt. Britain (including all her colonies)	41
Sweden	28
Greece	27 1-2
Hungary	13
Austria	8
Germany	7 2-3
Finland	6
France	5 1-3
Italy	3
Belgium	1 1-3

The brewers of the United States are trying to persuade us to drink more beer. They remind us that Belgium leads the world in the per capita consumption of beer. England comes next, Germany is third, Denmark fourth and America fifth. This order, it will be observed, was reversed at Athens. There "where the athletic supremacy of the world was settled," Belgium fell to the foot of the line and America took first place.

THE MEANING OF EFFICIENCY

Efficiency is coming to be the key-note in American education, but it means something more than physical efficiency, or material, or industrial, or even the efficiency in "applied science" which is universally granted to Amer-

ica. It means, as President Eliot once expressed it in a public address, "power for work and service during a healthy active life. The efficient nation will be the nation made up, by aggregation, of individuals possessing this effective power, and national education will be successful in proportion as it secures in the masses the development of this power, and its application in infinitely various forms to the national industries and service."

EFFICIENCY IN MENTAL TRAINING

America stands fifth on the brewer's list of "model" beer-drinking nations.

How does she stand measured by this broad efficiency of power for service developed in the masses of the people?

In Feb. 1907, the United States Consul in Rio de Janeiro* wrote that Brazil was arranging to secure teachers of agriculture, of manual training, and normal teachers from the United States. He reported that the Brazilian authorities had heretofore been working upon educational lines more or less European with Brazilian adaptations, but that these methods had not been found successful. The change to American methods comes after careful investigation and in obedience to the conviction that such a change is imperative if Brazil is to make the progress in educational lines its statesmen believe it ought to make.

Surely it is no small compliment to a comparatively young country when older systems are found less suitable than hers for training a younger nation to realize its powers.

BEER AND SCHOLARSHIP

Germany has attained enviable renown in pure scholarship. She has also attained a reputation, enviable or otherwise according to one's scope of vision, for beer-drinking. Naturally American brewers try to use this association as an argument in pushing their sales in the fertile fields of the college campus, among young men just learning to walk alone in the world's wide open. By taking them before they have mastered their Logic, the brewer tries to induce them to order their conduct according to his syllogism, namely:

German students drink beer;
German students become great scholars;
Therefore, beer-drinking makes great scholars.

But if the student becomes clear in his Logic, and learn the facts, before he fuddles his brain with beer, he will formulate more rational syllogisms, such as:

I. Many German students drink beer;
A few German students become great scholars;

*U. S. Consular Reports, Feb., 1907.

Therefore, something besides beer determines scholarship.

II. Many German students drink beer;

Many German students fail to pass their examinations;

Therefore, beer-drinking may have something to do with their failures.

III. Scholarship requires clear brains;

Beer-drinking dulls the brain;

Therefore, beer-drinking is not an aid to scholarship.

IV. Many great scholars have found beer-drinking an obstacle in their way;

Some students wish to become great scholars;

Therefore, such students would do well to avoid the beer-drinking obstacle.

Conclusions like these will be found to be in accord with the results of investigations made by some of the most celebrated German scientists, such as Prof. Forel, who says: "This I affirm, that in Germany, Switzerland and Austria; yes, and in France, a large part of the intellectual power of our academic youth is actually drowned in beer, wine and absinthe. The ridiculous drink compulsion and idiotic vain-glory at the drinking festivals German students have introduced are undoubtedly the most hideous deformity in our civilized country. They call it jovial. A pretty joviality, with its accompaniment of palsied tongues, staggering, fighting, vomiting and the 'katzenjammer' in which the most colossal imbecility is applauded, and the most vulgar beastliness and misdemeanors are excused and glossed over. Gentlemen, I believe there is only one way to work out of our academic degradation, viz., by organizing total abstinence societies among the students."

INDUSTRIAL EFFICIENCY

The brewers claim that beer is a harmless, stimulating and nourishing drink. No one who earns a living by honest toil will be inclined to deny that anything which lowers his money-earning power harms him. Even though he cannot put his finger upon the exact spot, if his brain works less clearly, if his muscles are less steady, or his power to endure is weakened; if he becomes careless when he should be careful, indolent when he should be alert, sick when he should be well, something has harmed him. This kind of harm has been proved against alcohol, even in the form of beer.

EVIDENCE THAT TELLS

A real test of the matter is made when the managers of large concerns employing many laborers, make careful comparisons between the work of abstainers and of non-abstainers.

Even German railroad managers, with all their national traditions and customs in favor of beer, have found that those faculties in man which determine his value in train service are harmed by beer-drinking. Some of them have prohibited the use of beer entirely during service. Several companies find it profitable to provide their employees, free of cost, with tea, coffee and other non-alcoholic drinks.

On the Baden railroads where this plan has been tried, the results are reported by the American Consul at Keil as most gratifying.* He says that the efficiency of the workmen has increased; they have performed their various duties more cheerfully, and have been more faithful in the discharge of the same. This has been especially noticeable among the workmen in the various freight departments. The powers of endurance notably increased. There were also fewer accidents to the employees, as they had better command of their faculties.

"The practice of serving hot coffee, tea and meat broth to the employees on the Prussian railroads has been followed for some time in the freight department, especially, where the men are obliged to make long runs."

In Belgium, also, the country that the brewers say "leads all others" in the per capita consumption of beer, the use of all alcoholic beverages during hours of service is practically prohibited, to Government or municipal employees, as well as on railways.**

If beer were the harmless and nourishing drink that the brewer's literature contends, railroad managers would not forbid it to their employees, and even tax themselves to provide substitutes.

The very theory upon which the German students tries to accustom himself to drink large quantities of alcohol, is that it is harmful, but that he must train his body to endure its harmfulness without visible protest.

The protest is there, however, only waiting for a Sherlock Holmes to unravel the clues. He has come in the person of that same German scientist, but not, as pictured by the brewer, with the beer-mug and fool's-cap. He comes with his plodding, microscopic methods, and his genius for the infinitely small, and in the face of his results and of America's genius for applying them, the brewer will soon find it more profitable to turn his vats to the production of de-natured alcohol for mechanical purposes, than to use them in producing stupefying beverages for human consumption.

*U. S. Consular Reports, Feb., 1906.

**Consul General Church U. S. Consular Reports, July, 1906.

THE TOBACCO HABIT AND RACE DEGENERACY

D. H. KRESS, M. D.

Superintendent Washington, D. C., Sanitarium.

WITHIN a few years the unfitness for military duty of many young men in England, Germany, and the United States has startled the world into facing the problem of a threatened race degeneracy, and this knowledge has led in recent years to the organization in civilized countries of health associations, physical culture societies and gymnastic clubs, all of which have for their aim the physical improvement of the race.

It is believed that in England and Germany the use of alcoholic liquors and tobacco has much to do with the physical inefficiency of the young men.

In America, similar conditions with regard to tobacco exist. It will be recalled that out of sixty-seven applicants who appeared for examination to enter the medical department of the United States Army in 1902, forty-three—nearly two-thirds—were rejected, having what the doctors pronounced "tobacco heart." This is specially significant when we bear in mind that those who applied were young men who considered themselves in the pink of health.

SOME EFFECTS OF TOBACCO

There can be no doubt that the great increase in heart-disease, and the many sudden deaths from heart failure in modern times, are due largely to the free use of tobacco. Tobacco not only weakens the heart's action, but in the course of time brings about the course of certain pathological organic changes in its structure.

The school board of Chicago in a medical examination of pupils, before allowing them to take part in certain athletic sports, discovered that a number of boys were in a physical condition that made violent exercise of any kind dangerous. Twenty-one out of one hundred were found totally unfit, and all but three suffered from some form of heart disease. The verdict was, "Almost without exception, they were cigaret smokers."

While during the last few years a great deal has been said about the evils resulting from the use of tobacco, I am convinced that half the truth has not been told. I fully believe its pernicious influence, especially upon the young, is not yet fully understood or appreciated. It has been observed by those who have been associated with "cigaret fiends" that they can not be relied upon; they will deceive, lie, and steal, just as will the mor-

phine or opium fiend [though in a smaller degree—Ed.]; tobacco, like cocaine or morphine, blunts the moral perceptions and demoralizes the entire being. It not only stupefies the brain and nerves, but lowers the vital resistance of the body, and paves the way for consumption.

DOES AGE MAKE SUCH A DIFFERENCE?

If tobacco is so highly injurious that we find it necessary to prohibit its use by the young man of sixteen or twenty, and to frown upon its use by women, by what logic can it be shown to be free from danger to the man of thirty?

If a substance is capable of destroying a young man of eighteen, is it not also capable of destroying a man of twenty-five or fifty? Is there any evidence that between the ages of eighteen and twenty-five the human organism undergoes a mysterious change which would render it immune to the evil results of nicotine? If ten cigarets used daily are sufficient to demoralize physically, mentally, and morally a boy weighing one hundred pounds, will not fifteen cigarets have a similar effect on the man weighing one hundred and fifty pounds?

The evils resulting from the use of tobacco must be determined by its influence upon the weak, and not by its influence on the robust. Any substance which acts injuriously upon the weak, will in a lesser degree, perhaps, act injuriously upon the strong. In order to check this evil, reforms must be made by fathers and teachers who say in all their habits of life to those who look to them as examples, "Follow me." When this is done, our educational and legislative efforts will be consistent, and will appeal to the youth. Just as long as the work of reform does not begin here, will the tobacco habit and degeneracy continue.—From an article in *Life and Health*.

CIGARET fiends, finally lose all sense of cleanliness and decency and come to think that an education is unnecessary and all kinds of work a nuisance. Such a boy if allowed to indulge his ever-increasing appetite without restraint in the use of cigarets will, in the course of a few years, reach a condition that he will not be worth picking out of the gutter. It is possible for him to reach a point beyond which he can not be saved. If the habit is not broken it will land him either in the hospital for the insane or the cemetery—providing his offences which have been superinduced by this delinquency have not already landed him in the State Prison.—JUDGE STUBBS, Indiana Juvenile Court.

PANSY'S MOTHER'S CHRISTMAS GIFT -

PANSY'S real name was Lettie, but her mother called her Pansy because she was bright-faced like the pansy flower. Pansy and Rhoda—Rhoda was Pansy's most intimate friend and lived across the street—were talking of Christmas over by Rhoda's gate, and Rhoda said, "My mother says that on Christmas, if we can, we must give people what they want most of all."

"But how can we tell what they want most of anything?" asked Pansy, and then after a moment, suddenly looked guilty.

"Oh, we most always know about our own folks," said Rhoda. "We hear them talking."

"Yes," said Pansy, frankly, "we do. I know one thing my mamma wants, for I've heard her say it a hundred times—oh, ever so many times! But you can't guess what it is!"

"What's the use of trying then?" laughed Rhoda.

"I'll be 'shamed to tell," said Pansy, "but it's just this. You know how I like to have my own way?"

"Sure," said Rhoda, mischievously.

Pansy laughed too, in a moment she was serious again. "I do believe what my mother wants most of anything in the world is to have me *give in*!" she said.

"I shouldn't be surprised," said Rhoda.

"Yes, of course you've seen me and know how I act," said Pansy, the color of a very deep-red pansy flower. Then she went on, bravely, "When I want to have my own way, and get into one of my tantrums, Mamma says, 'Lettie, can't you give in? I'd rather have you just give in than to have anything else in the world!' And yesterday she said, 'Well Lettie, I don't think you *can* give in, or you would!' and she sat and looked at me so sad and sorry, I went up stairs and I just cried!"

"And *can't* you give in?" asked Rhoda.

Pansy looked frightened, for a moment Rhoda seemed to think she *couldn't* give in, just as her mother had.

"It's likely I can, if I want to," she said. "I'm not so horrid that I *can't* be good, Miss Rhoda Green! I don't like you very much."

And then the saucy little Rhoda Green began to cry, and turned away, and Pansy began to cry too, and she started to run across to her side of the street, and Rhoda started to go into her own house. When Pansy saw that she stopped. "You haven't heard it all!" she called. "I intend to give in on Christmas day. That will be my present to Mamma, and what she wants the most of anything."

"But you may have a tantrum on Christmas!" called back Rhoda, with a naughty little laugh, and went home.

The next morning, Christmas morning, after they had wished each other "Merry Christmas!" Pansy put her arms around her mother and said, I *can* give in Mamma! Of course I can, and I am going to! That's my Christmas present to you Mamma!"

The morning after, when Pansy was reading in a new Christmas book, her mother hurriedly asked her to run over to the bakery and bring some fresh rolls, and little Pansy laid her book down and went at once, though to stop in the middle of a story was nearly

sure to bring on a tantrum!

Rhoda waylaid her at her gate, across the street. "Did you give your Christmas present?" she called. "Could you?"

Pansy answered with a little toss of her head. "Why of course I could," she said, "and I just 'joyed to give it!"

And Pansy's mother "just 'joyed" to have it too.

For when Pansy gave a thing she gave it for good and all!

It has been nearly a year now, and Pansy has not had a tantrum since Christmas last.—From *Our Little Folks*.*—For reproduction.

*See combination club offer.





Primary Lessons

THIRD YEAR

HABITS

This lesson logically follows that on the brain and nerves, but may be used at any time when appropriate. In this connection read "Habit Culture" on page 4, and the section on Habit, page 12, of the September JOURNAL. Impress the children with the importance of forming good habits now. Happiness and health are largely matters of habit. If there is a child in the class who has a tendency to look on the dark side and to brood over real or fancied wrongs, or one who is nervous and inclined to think she is sick whether she is or not, talk with each privately and lead her to form a habit of contentment and cheerfulness, or of thinking she is strong and can grow stronger by refusing to mind little ills.

Teach poems, quotations, and songs which will impress the children with the need of good habits. In addition to those furnished, procure the song, "We're building for Eternity" to be found in several song books used by Christian Endeavor Societies; "The Wisdom of Folly", by Ellen T. Fowler (November 1906 JOURNAL); "Habit Breaking", by John Boyle O'Reilly, etc. Emphasize the glory of a self-control so perfect that we can command ourselves to do right in all things, and show the dangers of beginning the use of narcotics which in addition to having the force of ordinary habits, have the power so to change the brain and nerves that one may lose all his power of self-control.

WE have already learned that we can train the brain to obey orders, and that we can train our sense and motion nerves so that they can act more and more quickly and do better and better work.

How many have a baby brother or sister at home? Ask one of the children to tell how the baby learned to stand, then to walk a few steps at a time, and then to run. Why could not the baby walk at first? See that the class clearly understand that the motion nerves and the muscles had to be trained, and that this was done by repeating the same acts over and over till the nerves and the muscles could do their work quite easily. Why can you run faster now than when you were little?

How many of you have taken lessons on the piano? Why could you not play the exercises as quickly at first as you can now? Think of some other things that were very hard to do at first, but which you have done

so many times that you can now do them easily or without seeming to think much about the doing. When we are able to do things in this way what do we say we have formed? (A *habit* of doing it.)

Why does a house dog always go to his bed at night? Why does he not lie down anywhere in the house? Why do chickens go to the same place each time to be fed, and to a certain roosting-place at night?

Speak of other good animal-habits which may be familiar to the children and contrast them with bad ones, such as those of dogs and cats, in stealing food or coming to the table to be fed, etc. Ask what habits they would like in a dog or cat. Show that it is easy to train animals to good habits if they are made to do the right thing every time. When do the creatures form habits most easily. Why do people say that it is hard to teach an old dog new tricks? Show that all creatures including boys and girls acquire habits most easily when they are young.

HABIT—THAT WHICH HAS YOU

A few days before taking up this lesson tell the children you are to hold a contest for one week and see who can win the most perfect record. The names of the boy and girl winning the best records may be placed upon the board for a week and, under them, the names of those who deserve honorable mention. The report is to be made and honors awarded at the hygiene lesson period. Pass to each child a folded slip on which is written his name. Inside this slip write appropriate directions. Thus the child who is often late to school is directed to be on time each session of the week; the child who is untidy, to keep everything about him very neat; the child who is not inclined to be obedient, to do everything required of him quickly and cheerfully; the one that looks on the dark side to find at least one thing each day to make him happy; and so continue asking each child for one week to overcome his own besetting habit, though you will not, of course, put it in that way. For your own convenience, make a memorandum of these in a note-book and check any failures observed.

If each strives for a week to overcome his bad habit (and this is to be done as the slips indicate, by substituting the good habit for the bad one) he will have a strong object lesson on the way a habit holds us, the difficulty of overcoming it, and, on the other hand, the advantages of forming good habits and the fact that one can conquer a habit when he really bends his mind to it. Some children may learn for the first time that they are thus in the grip of a bad habit, and may observe the bad effects in others as well as the ease with which some are able to do the same thing because a good habit helps them.

At this point in the lesson take up the matter of the slips. How many have a clean record (not having failed a single time to do the thing mentioned)? How many found it quite hard to do this? Ask several of these children if they find it hard to be promptly in their places when the bell rings, to keep desks neat, etc., in each case asking the question of a child who happens to have that particular good habit.

By further questioning bring out the idea that the reason each of them finds it hard to do some things and easy to do others is because their habits help or hinder them. Show that it will be that way all their lives. They can now decide whether it shall be easy or hard for them to do right. Ask the children to name the habits that will make it hard for them to do right, and write them on the board. Discuss these briefly, leading the children to see why they are bad habits. (At this time, the teacher has a specially good opportunity to take note of any bad physical habits of members of her class, such as sitting on one foot, etc. Explain why these are harmful. Teachers need also to be watchful regarding secret habits and should not fail to talk kindly and helpfully with any child addicted to such habits unless the matter may be wisely referred to the mother.)

Have at hand a spool of thread and ask one of the boys to come before the class. Put a handkerchief around his wrists, loosely wind thread once about them, and then ask him to free his hands. Of course he can easily do so. Then wind the thread around two or three times and let the class note that it is now harder for him to break the fetters. Repeat several times winding more threads each time, till at last, although as the class can see, his wrists are bound only with threads, his hands are fast.

Ask the class in what way this represents the manner in which habits are formed. They will probably be quick to see that each separate act is like a weak thread, but when one act after another is added, the person becomes tightly bound.

HOW TO OVERCOME BAD HABITS

Tell the children to suppose the thread thus binding the boy represents, we will say, untruthfulness (whatever habit is chosen it must, of course, be one which this child does not have), how *can* the habit be broken? Yes, in the same way it was formed. That is every time he tells the truth when he might have told something untrue, a thread comes off till at last he is quite free. (Tell them that it is only cowards that tell what is untrue. One who is brave enough tells the truth, no matter what the consequences may be.)

Turn to the board and ask what habits must be put in the place of the bad ones to get rid of them. As the children suggest, erase the bad habits and write in the good.

Again referring to the written slips, ask the children who kept clean records if they did not find it much easier to follow the direction the last of the week than the first;

easier at home and in other places as well as a school; was it not easier to do other right things? Lead the children to see that it is always hardest when one begins to put a new good habit in the place of an old bad one, so they have already made a good start toward establishing the good habit. Try to have them continue the habit thus begun, a week at a time, until all can be on the honor list. A wholesome rivalry among the children to see who will be the first to win in this contest may perhaps be initiated and the whole class be benefitted. It is probable that among the bad habits upon the board there will be mentioned the tobacco and alcohol habits. These should be left till the last and discussed more in detail.

THE CRAVING HABITS

Speak again of the fact that habits are formed whenever one's brain and nerves order the same act and the muscles obey times enough to make it easy to do that thing without much thinking. Each time the brain decides to give an order it is easier for the next one to be given and obeyed.

How did the boy begin to be bound? How does every habit start? Show that if we allow ourselves once to do a thing we ought not, it may be the beginning of a bad habit which will always hinder us.

What is the difference between a bad habit like tardiness and one like using cigarets or tobacco, or drinks containing alcohol, like cider, wine or beer? Why are these habits much worse? Review briefly the effects of these drugs on the physical, mental and moral nature as far as the children have studied these, bringing out especially the power they have to form a craving for themselves.

Show that the constant use of these drugs forms an ordinary habit, but that in addition, there are actual changes in the brain and nerves which may become so great that self-control is broken down, and it is impossible to break the habit even when the body is being destroyed. Show further that many great men as well as people with weaker wills, have been enslaved, or ruined entirely by these drugs because they did not understand the danger in smoking the first time or in drinking the first glass. Emphasize strongly the necessity of shunning the first act which may lead to a wrong habit.

The February issue will be an Anti-Narcotic Number.

Fasten the drink habit upon the boy and his future earning capacity is thereby mortgaged to the brewer and the distiller.—Wary W. Hunt.

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

A NATIONAL ASSET

THE growing interest in questions of public health is significant of the growth of social consciousness. We are learning that that man is most completely fulfilling the purposes of the race who has beneath his mental and moral development a sound physique, and that the truly great and effective nation is the one that preserves and builds up physical integrity.

President Roosevelt in a recent letter on this subject has well said:

"To prevent any possible deterioration of the American stock should be a national ambition. We can not too strongly insist on the necessity of proper ideals for the family, for simple living, and for those habits and tastes which produce vigor and make men capable of strenuous service to their country. The preservation of national vigor should be a matter of patriotism."

HEALTH education is no longer a question of privilege. It is a patriotic duty. There is a great loss of power if the schools turn out pupils mentally trained but physically neglected or ignorant of the principles of healthful living. Systematic, practical teaching of this subject will have to have increased attention in our public schools if they are to keep pace with the public needs and the demands of the community.

There is a sense of proportion to be cultivated also in this matter. For example, drawing and music are good and necessary elements of public school instruction. No one would have them neglected. But when, as in one of the large eastern cities, only one-fourth as much definite time is assigned in the program to hygienic teaching as to drawing, and only one-sixth as much as to music, it is evident that someone is either deficient in a sense of proportion, not to say of humor, or is lamentably indifferent to the needs of

the pupils or to the public health. The same course provides for no systematic health teaching in four of the eight school years. What would be the impression upon the educational world, we wonder, if the recommendation made for music in these grades should read as follows, what is said of hygiene:

"In the first, second, fourth and sixth grades, while no set time is allowed for the teaching of [music], it is expected that teachers will avail themselves of favorable opportunities for instilling into the minds of the children elementary principles of practical [music]"? How much really valuable musical training would be expected to result under such conditions? What reason have we to expect any better results in the case of hygiene from mere hap-hazard instruction in the principles of healthful living?

Let us teach the children to sing with the spirit and with the understanding, to draw, and to design, but in the name of all that makes for an efficient manhood and womanhood and an achieving nation, let us not relegate the instilling of principles of healthful living and sobriety to mere "favorable opportunities", especially in the grades where the children are in the pre-eminently habit-forming period of life, and where alone the great majority of them can be reached.

REV. ALBERT HALE PLUMB, D. D.

August, 23, 1829—December 4, 1907

A FEW months ago a group of clergymen in Boston had gathered to do honor to the memory of the Rev. Daniel Dorchester, D. D., who in his life of four score years had been identified helpfully and enthusiastically with many great national causes, one of them being the work of public school temperance education.

Among the speakers was a clergyman of another denomination who was presented by the chairman in these words, "I need not introduce the next speaker to this audience. Boston knows him as the friend of every good cause,—Dr. Albert H. Plumb."

No truer characterization could be made of the spirit and life of this earnest, eager, achieving personality. The beloved pastor for thirty-five years of one of Boston's largest churches, his parish was the entire city and indeed the world, so wide were his active sympathies. Love of God, love of country and love of humanity made him the helpful, fearless champion of all efforts for human help or betterment.

Among the many however, one was particularly dear to him concerning which he felt a

special gratification at having been "permitted to share in it," as he modestly expressed himself, namely, public school temperance instruction. Associated intimately with it for nearly a quarter of a century as one of Mrs. Hunt's advisors, how royally he gave time, counsel and influence to the promotion of this cause in this and other countries none will ever know save those who were intimate witnesses of those years. Personal convenience was never considered when his aid was sought. Many a Friday evening after his weekly prayer meeting, his ring was heard at the door at nine or ten o'clock, as the first hour in the day in which he was at liberty to give his attention to some pressing matter in connection with the temperance educational work. And all this wealth of service was given with a certain knightly chivalry once quaintly expressed in reply to words of appreciation for assistance rendered by him at considerable personal inconvenience, "A man ought to be ashamed of himself who would not help a cause like this."

The position of adviser to a work of this kind in its formative period was no sinecure. There were interviews, personal and joint letters in which Dr. Plumb's facile pen was often sought and frequently voluntarily devoted to the promotion of the work, long and sometimes trying conferences with publishers and others, public and legislative addresses, replies to criticisms, resolutions drafted and their passage secured,—all these rendered assistance which can never be expressed by statistics. It was an earnest, consecrated, persistent force, exerted because these men, Dr. Plumb and his colleagues, thoroughly believed in the cause, that contributed more to the success of the movement than the world will ever know or appreciate.

An intensity of conviction that knew no compromise on principle as he saw the truth, was blended in Dr. Plumb with a native gentleness and kindness that made him a friend, and even an opponent, beloved. A ready and saving sense of humor, a gift for appreciation of work well done and an uncommon joy in giving recognition to such work, a never-failing sympathy in the common experiences of men and women, all these were a few of the attributes of this life which was filled to the end with helpfulness, and which has left a benediction upon those who knew him, and upon the causes to which he devoted himself.

AN APPRECIATION

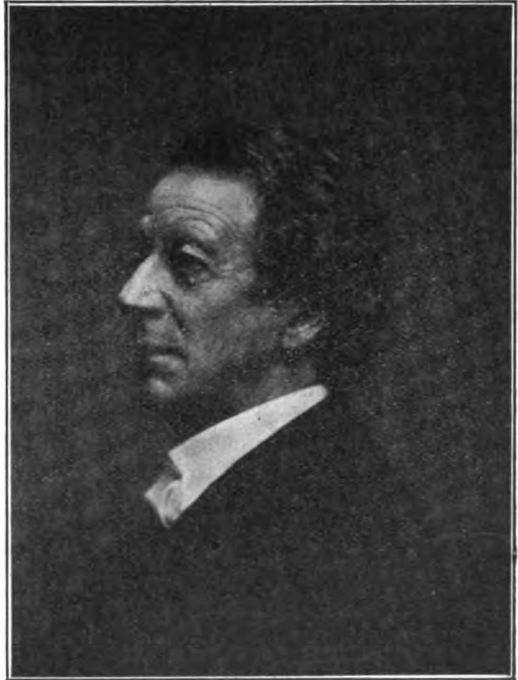
Resolutions adopted by the Scientific Temperance Federation, January 9, 1908.

Resolved: That in the home of Rev.

Albert H. Plumb, D. D., this organization has lost a stalwart friend and supporter.

Resolved: That in every cause of reform, the city and state had in him a vigorous helper.

In the city of Boston where he spent the greater part of his long life, he was a unique figure. Always courteous, he met with the severity of an Isaiah the subtle attacks of the foes of any of the good causes he so ably championed. Whether in the pulpit, before the legislative committees, or as a member of an organization, he was never a figurehead.



My eager soul, we'll turn our prow,
The hour has struck, the end is now.
God calls! We'll run our boat ashore,
We'll row the stream of life no more.

To other hands these great affairs,
The toils we love, our hopes, our cares,
We'll yield them all, at His behest,
Who plans our work and times our rest.

—ALBERT H. PLUMB, Jan., 1906.

A man with a purpose, was the impression he made.

The work of this organization was particularly dear to him. Believing utterly in Mrs. Hunt's honesty of investigation, earnestness of purpose, and high Christian character, he stood undaunted by her side in her darkest hours, and when she could no longer speak for herself, with chivalric fearlessness he championed her cause with manful vigor.

Resolved: That while we shall see his face so full of beatitudes no more, we will cherish his memory and thank God for his long and truly noble life.



Grammar Lesson

FIFTH OR
SIXTH YEAR

BREAD VS. BEER

A QUEER CROP

"Oh, what's Mamma doing?" sighed Nannie Burt. For though Big Brother did his best, the time was long, and the lame ankle ached worse when Mamma was out.

"She's farming," said Big Brother.

"Why she hasn't any farm," said Nannie.

"She doesn't need any," said Big Brother.

"She doesn't plant in the ground."

"Not in the ground!" cried Nannie. "And it's too early to raise crops."

"Mamma does, three times a week, the year round."

"Why, brother, crops don't grow so quickly as that."

"This crop grows in one night, Nan."

"In one night! Now Big Brother, I guess you're just making b'lieve!"

"Not a bit of it, girlie. Its a queer crop, but very useful. It doesn't need any ground to grow in, or any sunshine or any rain. And even Mamma never sees the crop, and doesn't care about it for itself. She just raises it on account of the holes."

"What holes?" asked Nannie, eagerly. "Are they post-holes, or button-holes?"

"No, nor augur-holes, nor mouse-holes, nor bullet-holes. They're the kind you eat. I suppose you wouldn't care for the holes by themselves, but you wouldn't care for the other part without them, either. Well, here comes Mamma, and I must look over my history."

"Mamma," said Nannie, quite forgetting her ankle, "what have you been doing?"

"Setting the sponge for my baking tomorrow," said Mamma. "I guess Big Brother has been telling you a funny story; now can't you tell it to me?"—*Youth's Companion*.

Read the story of the queer crop above to the children and ask them to guess what Mrs. Burt's crop was. If they cannot tell,

show a piece of bread. From what is bread made? Show flour and grains of wheat. What kind of plants did she use? Show pictures of yeast plants, and a cake of yeast. Explain that a yeast cake is nothing more than many thousands of yeast plants pressed into a cake. Tell something of how these plants grow, i. e., new plants thrown off from the old ones. Ask members of the class to explain how bread is raised and how made. (If desired, the teacher may on the preceding day ask the members of the class to learn at home just how this is done.)

Bring out the points that the flour has to be moistened with water or milk, kept in a warm place, and moulded out at the right time (to stop the crop from growing too long) and that in many cases a little sugar is added to make the bread rise better.

What conditions, then, are necessary in order that the yeast-plant crop shall grow well? What happens when the crop begins to grow? Explain that when the bread "rises", i. e., the yeast plants multiply, some of the starch in the flour is changed to a kind of sugar. The yeast plants can feed upon this sugar and there is a little alcohol and a great deal of carbonic acid gas formed. The gas tries to escape but the sticky dough holds part of it in and so the holes are made and the bread is light and easy to digest. (Ask the children to compare some soggy bread they may have seen with this nice, light piece and they will readily see the advantages of the "holes.")

After the bread rises, what next is done? What kind of an oven must one have to bake bread well? How long is the bread baked? What happens to the little alcohol (there is never very much)? Does it remain after the bread is baked?

Be sure that every child understands perfectly that while the bread is being baked the heat of the oven drives out the alcohol, leaving the bread light and wholesome.* Who can tell why bread is called "the staff of life"? Why not eat it when it is quite new?

Ask the children to write or tell what may be called the second chapter of the story of the queer crop, that is, the story of how the yeast was planted and how it grew, what kind of a crop was harvested, the use of the "holes"

*The quantity of alcohol even in new bread is practically negligible, for according to the careful investigations of Pohl (*Abstinenter Arbeiter*) the average amount of alcohol in 100 grains of bread is only .0657 grains (less than one drop). Estimating that a man eats 500 grams of bread (1.1 lbs.) a large amount, he would consume only .30 grams of alcohol per day (about four drops) the equivalent of the alcohol in 1/300 of a quart of wine (100 grams to the liter).

and what became of the alcohol. This will serve as a review, show whether all the class understand the lesson clearly, and will offer a fascinating theme for imaginative work based on the familiar household operation of bread-making.

ANOTHER CROP

Ask one or two children who need extra work to see what interesting things they can find out about barley and be ready to give these items to the class. They may refer to geographies, Industrial Readers or even encyclopedias, and should be able to tell where barley is grown, etc.

When they have told their classmates what they can about barley, the teacher may add such facts as she desires. She should emphasize the importance of barley as a food. This may be done by telling the fascinating story of the barley and barley-cakes found in the dwellings of the people who lived in Switzerland in the stone age before tools were made of iron, so far back that there is no history; how it grew in Egypt when the Israelites were in bondage and is mentioned several times in the Bible as the food of the Hebrew people; how the Greeks trained their athletes on it, and so on, briefly, down to the present day. The Norwegians still eat a great deal of barley bread, while in many other countries this nourishing grain is used in the form of pearl barley, pot barley or barley flour. It is also good food for animals and it grows as far north as Iceland and Alaska and as far south as Egypt. Thus it is an important food for man and beast the world over.

Show specimens or pictures of heads of barley, and of other forms already mentioned and allow the children to compare these with the samples of wheat and wheaten flour. Explain that it is not because barley flour is less nourishing than wheat flour, that more bread is made from the latter, but because wheat bread rises better and so is lighter and more palatable. In our own country where is the most barley grown? How much barley was grown in the United States last year? (In 1906, about 179,000,000 bushels.) If there were 85,000,000 people in our country that would mean that there was in one year enough barley raised to give every man, woman, and child more than two bushels of nourishing grain.

Having emphasized the food value of barley, speak to the class of the inestimable damage done to the great food grains each year by various fungus growths, such as smut on corn, and rust

on rye and wheat, etc., but tell the class that there is no such destruction among all these as that which the yeast plant is made to work in the barley. Think of such a calamity as the destruction yearly of 60,000,000 bushels of grain as nutritious as barley and capable of feeding so many thousand people.

Speak of fire which is said to be a good servant but a bad master. As a servant, it is indispensable, for it runs our machinery, heats our homes, and cooks our food, thus accomplishing untold good, but when it becomes a master it destroys property and life.

Compare the yeast plants to fire in that they bless or curse mankind, according to the way in which they are applied. As good servants they help in the preparation of bread in almost every home in the land, but on the other hand, when used by the brewer to change the food, barley, into beer which contains the poison, alcohol, they also accomplish the destruction of millions of dollars' worth of food and ruin many lives.

Allow each of the children to chew two grains of barley, the first to show the starch content, and the second, which has previously been sprouted, to show that the starch has been changed to sugar. Call attention to the fact that the sprouted barley is entirely changed. Could it now be ground into flour or made into pearl or pot barley? If a grain merchant's stock of barley should sprout he would consider it spoiled. On the other hand, the process of sprouting just suits the brewer's purpose.

Ask some child to tell briefly how the brewer makes beer. When he puts yeast plants into the sweetish liquid made from the malt of the barley what crop does he wish to raise? What becomes of most of the food



"We should so live and labor in our time that what came to us as seed may go to the next generation as blossom, and what came to us as blossom may go to them as fruit. This is what we mean by Progress."

AN AMERICAN WATCHWORD

By E. L. TRANSEAU

IN April and May 1906, between eighty and one hundred thousand people gathered daily, for ten days, in the classic city of Athens, around a reconstructed ancient stadium, to witness a twentieth century revival of the Olympian Games.

Nine hundred and one contestants, representing 20 nations were there to compete for prizes. Of these 298 were Greeks, 73 French, 66 British, from all parts of the Empire, 57 were Swedes, 56 Danes, 44 Norwegians, 43 Americans, with less numbers from the remaining countries.

When a contest was finished, the national flag of the victor was raised to show what country's representative had won. And the flag that went up oftenest was the Stars and Stripes. One day, three American flags flew up in succession, announcing that Americans had won the three prizes, 1st, 2nd, and 3rd, in the standing broad jump.

EFFICIENCY IN PHYSICAL ACHIEVEMENT

When the games were ended and the points counted, America, with only 43 representatives out of 901, had scored 75 5-6 points out of a total of 206. The list of the points of the winning nations stood:

America	75 5-6
Gt. Britain (including all her colonies)	41
Sweden	28
Greece	27 1-2
Hungary	13
Austria	8
Germany	7 2-3
Finland	6
France	5 1-3
Italy	3
Belgium	1 1-3

The brewers of the United States are trying to persuade us to drink more beer. They remind us that Belgium leads the world in the per capita consumption of beer. England comes next, Germany is third, Denmark fourth and America fifth. This order, it will be observed, was reversed at Athens. There "where the athletic supremacy of the world was settled," Belgium fell to the foot of the line and America took first place.

THE MEANING OF EFFICIENCY

Efficiency is coming to be the key-note in American education, but it means something more than physical efficiency, or material, or industrial, or even the efficiency in "applied science" which is universally granted to Amer-

ica. It means, as President Eliot once expressed it in a public address, "power for work and service during a healthy active life. The efficient nation will be the nation made up, by aggregation, of individuals possessing this effective power, and national education will be successful in proportion as it secures in the masses the development of this power, and its application in infinitely various forms to the national industries and service."

EFFICIENCY IN MENTAL TRAINING

America stands fifth on the brewer's list of "model" beer-drinking nations.

How does she stand measured by this broad efficiency of power for service developed in the masses of the people?

In Feb. 1907, the United States Consul in Rio de Janeiro* wrote that Brazil was arranging to secure teachers of agriculture, of manual training, and normal teachers from the United States. He reported that the Brazilian authorities had heretofore been working upon educational lines more or less European with Brazilian adaptations, but that these methods had not been found successful. The change to American methods comes after careful investigation and in obedience to the conviction that such a change is imperative if Brazil is to make the progress in educational lines its statesmen believe it ought to make.

Surely it is no small compliment to a comparatively young country when older systems are found less suitable than hers for training a younger nation to realize its powers.

BEER AND SCHOLARSHIP

Germany has attained enviable renown in pure scholarship. She has also attained a reputation, enviable or otherwise according to one's scope of vision, for beer-drinking. Naturally American brewers try to use this association as an argument in pushing their sales in the fertile fields of the college campus, among young men just learning to walk alone in the world's wide open. By taking them before they have mastered their Logic, the brewer tries to induce them to order their conduct according to his syllogism, namely:

German students drink beer;

German students become great scholars;
Therefore, beer-drinking makes great scholars.

But if the student becomes clear in his Logic, and learn the facts, before he fuddles his brain with beer, he will formulate more rational syllogisms, such as:

I. Many German students drink beer;
A few German students become great scholars;

*U. S. Consular Reports, Feb., 1907.

Therefore, something besides beer determines scholarship.

II. Many German students drink beer;

Many German students fail to pass their examinations;

Therefore, beer-drinking may have something to do with their failures.

III. Scholarship requires clear brains;

Beer-drinking dulls the brain;

Therefore, beer-drinking is not an aid to scholarship.

IV. Many great scholars have found beer-drinking an obstacle in their way;

Some students wish to become great scholars;

Therefore, such students would do well to avoid the beer-drinking obstacle.

Conclusions like these will be found to be in accord with the results of investigations made by some of the most celebrated German scientists, such as Prof. Forel, who says: "This I affirm, that in Germany, Switzerland and Austria; yes, and in France, a large part of the intellectual power of our academic youth is actually drowned in beer, wine and absinthe. The ridiculous drink compulsion and idiotic vain-glory at the drinking festivals German students have introduced are undoubtedly the most hideous deformity in our civilized country. They call it jovial. A pretty joviality, with its accompaniment of palsied tongues, staggering, fighting, vomiting and the 'katzenjammer' in which the most colossal imbecility is applauded, and the most vulgar beastliness and misdemeanors are excused and glossed over. Gentlemen, I believe there is only one way to work out of our academic degradation, viz., by organizing total abstinence societies among the students."

INDUSTRIAL EFFICIENCY

The brewers claim that beer is a harmless, stimulating and nourishing drink. No one who earns a living by honest toil will be inclined to deny that anything which lowers his money-earning power harms him. Even though he cannot put his finger upon the exact spot, if his brain works less clearly, if his muscles are less steady, or his power to endure is weakened; if he becomes careless when he should be careful, indolent when he should be alert, sick when he should be well, something has harmed him. This kind of harm has been proved against alcohol, even in the form of beer.

EVIDENCE THAT TELLS

A real test of the matter is made when the managers of large concerns employing many laborers, make careful comparisons between the work of abstainers and of non-abstainers.

Even German railroad managers, with all their national traditions and customs in favor of beer, have found that those faculties in man which determine his value in train service are harmed by beer-drinking. Some of them have prohibited the use of beer entirely during service. Several companies find it profitable to provide their employees, free of cost, with tea, coffee and other non-alcoholic drinks.

On the Baden railroads where this plan has been tried, the results are reported by the American Consul at Keil as most gratifying.* He says that the efficiency of the workmen has increased; they have performed their various duties more cheerfully, and have been more faithful in the discharge of the same. This has been especially noticeable among the workmen in the various freight departments. The powers of endurance notably increased. There were also fewer accidents to the employees, as they had better command of their faculties.

"The practice of serving hot coffee, tea and meat broth to the employees on the Prussian railroads has been followed for some time in the freight department, especially, where the men are obliged to make long runs."

In Belgium, also, the country that the brewers say "leads all others" in the per capita consumption of beer, the use of all alcoholic beverages during hours of service is practically prohibited, to Government or municipal employees, as well as on railways.**

If beer were the harmless and nourishing drink that the brewer's literature contends, railroad managers would not forbid it to their employees, and even tax themselves to provide substitutes.

The very theory upon which the German students tries to accustom himself to drink large quantities of alcohol, is that it is harmful, but that he must train his body to endure its harmfulness without visible protest.

The protest is there, however, only waiting for a Sherlock Holmes to unravel the clues. He has come in the person of that same German scientist, but not, as pictured by the brewer, with the beer-mug and fool's-cap. He comes with his plodding, microscopic methods, and his genius for the infinitely small, and in the face of his results and of America's genius for applying them, the brewer will soon find it more profitable to turn his vats to the production of de-natured alcohol for mechanical purposes, than to use them in producing stupefying beverages for human consumption.

*U. S. Consular Reports, Feb., 1906.

**Consul General Church U. S. Consular Reports, July, 1906.

material which came from the barley? Remind the class of the fact that in the sprouted grain the starch has changed to sugar and show that as the yeast plants grow, the greater part of the sugar is broken up into alcohol and carbonic acid gas.

Accordingly, the food particles which were, as they know, abundant, are nearly all destroyed. The growth of the yeast plants has ruined the barley for food both because the nutritious part has nearly all been changed into alcohol and because the alcohol thus formed is a poison which makes the whole drink harmful.

What became of the carbonic acid gas of the alcohol? How much alcohol is there in beer? Refer to text books which will show that there is about 4 per cent. to 5 per cent. alcohol or about the same amount in 8 glasses of beer that there would be in 1 glass of whisky.

NATURE AND EFFECTS OF BEER

In presenting this topic, the teacher should be very definite and earnest, for there can be no doubt that of all alcoholic drinks, beer is the most insidious and the one which children and youths will be most often tempted to drink. Be sure that every child understands clearly that the alcohol in beer is just the same and just as poisonous according to amount as absolute alcohol. Emphasize the following statements. Place them on the blackboard, together with short quotations covering the points, and allow them to stay for several days. For busy work, let the children copy them and find one or more extra quotations, or they may use the points as topics in short compositions.

1. *Beer is not a nourishing food but a poisonous drink.* (Correctly define words, "food" and "poison." Compare bread, or flour, or milk, with beer.)

2. *Beer decreases strength and working ability.* (Use illustrations in article, pp. 67-9.)

3. *Beer makes a person more liable to disease.* (See p. 16, Sept. Journal and p. 51, Dec. issue.)

4. *Beer breaks down self-control and is thus a forerunner of drunkenness.* (German Manifesto.)

5. *Beer tends to injure the character.*

A nickel's worth of flour furnishes 80 times more proteids and 61 times more carbohydrates than a 5-cent glass of beer.... Hence a man would need to swallow daily 27 quarts of beer (over 1-5 of a barrel) containing 29 ounces by weight of absolute alcohol, to supply himself with the necessary proteids, or

about 13 quarts to supply the carbohydrates. —G. O. HIGLEY, Prof. of Chemistry, Ohio Wesleyan University.

A GERMAN ANTI-ALCOHOL MANIFESTO

The Germans are often quoted as exponents of the theory that beer-drinking is healthful and does not lead to drunkenness. Compare this theory with the facts set forth in the following Manifesto signed in 1907 by over 100 professors of medicine and jurisprudence, many of international reputation, in German universities.

"It is a scientifically indisputable fact that alcoholic drink undermines the physical and intellectual powers of the human race and hurts the moral welfare of the people more than any one factor.

"It impregnates the offspring with hereditary ailments and deteriorates the race.

"More than half of the inmates of our penal institutions have been actuated to their criminal course by alcoholic indulgence, and about one-fourth of the male inmates of the insane asylums owe their deplorable condition to the same cause. Domestic misery, poverty and criminality follow in the wake of this poisoner of the race.

"Alcohol has been shown to be the cause of one-tenth of the deaths among the adult population. Thirteen hundred deaths occur annually in Germany alone in consequence of intoxication, and sixteen hundred victims of alcohol commit suicide every year in this country, while about 30,000 are added annually to the list of those suffering from delirium tremens and other nervous disorders.

"Moderate drinking has a tendency to make the human body more liable to disease, and to shorten life. Furthermore, it is the moderate use of liquors which leads and entices so many thousands of our countrymen to the intemperate course, which they at first not only did not desire, but positively abhorred.

"This consequence is a natural one on account of the inherent nature of the alcoholic poison and of the human nervous system. Even though we were optimistic enough to believe that the latter would ultimately adapt itself to the inroads of the alcoholic poison, the fact of the perfidious character of the poison would remain. Hence the practice of moderate drinking remains the ultimate source of intemperance."—Translated by PROF. J. G. EVERT, in *American Issue*.

For further data regarding beer see JOURNAL as follows: Nov. '06, pp. 42-4; Apr. '07, p. 123; Nov. '07, p. 38.

The Scientific Temperance Federation*

"The scientific enlightenment of the public is the final reliable foundation upon which to build the redemption of the race from alcoholism."

IMPORTANCE AND TIMELINESS OF THE FEDERATION

The incontrovertible truth of the danger of a strong minority who still want drink, the incoming of hundreds of thousands of immigrants nearly all of whom bring drinking customs, the ignorance of millions as to the actual potential harm in alcohol, the danger that when alcohol is legally abolished increasing recourse will be had to other equally harmful narcotics, the supreme reasonableness of the preventive method—these facts constitute a powerful six-fold argument for greater earnestness and concentration upon the education of the whole people to that knowledge of the truth about these substances which alone can save the race to its best.

Such are the reasons why the organization of the Scientific Temperance Federation with its emphasis upon this educational principle seems both timely and providential. Nor is such emphasis inconsistent with the truly scientific spirit expressed by the Federation's name. Before the truth can be given the people, it must be gathered from its many sources, isolated facts brought into their proper mutual relations and studied in the light of past knowledge.

But truth has power only as it is given outlet. Thus the two phases of the Federation's work, while distinct in their nature, are interdependent in their operation. Both are vitally necessary to the emancipation of humanity from the serfdom of narcotic habits.

THE FIELD OF SERVICE

There are five great leaders of public thought and action: the press, the school, medical opinion, the pulpit, the platform.

To link these leaders in the education of the whole people as to the nature and effects of alcoholic drinks and other narcotics as demonstrated by modern scientific research is the most important work of the present. It is to this end that the Scientific Temperance Federation is dedicated.

Already, a considerable number of influential men and women in this country and abroad have expressed their cordial appreciation of the plans, purposes and work of the Federation in the field of social service and will be associated with the Federation in various ways.

By their membership in other organizations

they have opened a wide field for co-operation. Some of these societies are: The American Medical Association, the American Society for the Study of Alcohol and other Narcotics, the National Society for the Study and Prevention of the Social Evil, the National Educational Association, the Anti-Saloon League, the International Order of Good Templars, the International Society of Abstaining Physicians, the Woman's Christian Temperance Union, the Permanent Committee on Temperance of the Presbyterian General Assembly, the Temperance Committee of the National Council of Congregational Churches, the Unitarian Temperance Society, the Social Educational League, the United Kingdom Band of Hope Union, the International Temperance Bureau, the German Society of Abstaining Physicians.

THE FEDERATION AT WORK

The collection of scientific material has gone on constantly during the year with the result that there have been added and filed over 1,000 books, pamphlets, bulletins, abstracts, etc., on the alcohol question and related topics. A close watch has been kept of all the leading medical journals in this and other countries, of government and consular reports and other sources of information. This has necessitated a vast amount of work, including the reading of German, French, Swedish, and Italian, as well as English authorities, the translation of what was valuable in other languages, copying, verifying references, etc., together with the inauguration of a new system of classifying, indexing, and cataloging, which, when completed, will make it possible to secure all available data on a given topic at almost a moment's notice.

When it is remembered that probably no such comprehensive and growing collection of data on this subject exists elsewhere in America, its inestimable value to all students of the question becomes strikingly apparent.

Nor has all this valuable material been idle. Its resources have been drawn upon heavily by physicians, educators, editors, lawyers, theological students, temperance workers, Congressmen, and others from all parts of our own and foreign lands. The subjects of inquiry covered almost every conceivable phase of the alcohol and narcotic questions, and the facts, thus furnished, incorporated into addresses, papers, and newspaper articles have literally reached millions.

*From the Report read at the annual meeting of the Scientific Temperance Federation, Boston, January 9, 1928.

THE PRESS ENLISTED

Some of the most valuable work of the year has been done through the medium of the press. For instance, data was furnished for a paper read before the American Academy of Medicine and afterwards reprinted in its "Bulletin." Two editors, representing alone over half a million subscribers, were supplied with facts which they desired to complete articles. Data from Dr. MacNicholl's inquiry into the effects of alcohol on school children, sent to Mr. W. R. Hearst, were used soon afterwards as the basis of a strong warning against the use of alcohol in an editorial published in the "New York Journal," "Boston American," and "San Francisco Examiner," thus reaching millions who most need such information.

The "Press Circular," issued by the Federation, which contains up-to-date scientific and other facts about alcohol printed in popular and convenient form for the use of editors, is a successful attempt to make good the great loss which the public has heretofore sustained because these facts did not reach the people promptly. The Press Circulars have been very well received; editors representing a wide range of interests and fully 1,800,000 subscribers, and, of course, several times that number of readers, have already asked that the circulars be sent them regularly.

An unforeseen development of the Press Circular has been inquiries for information on special topics elicited from the editors themselves.

Articles by the secretaries of the Federation have been published in temperance, religious, and daily papers, touching the various phases of the importance of temperance education for children and youth, and setting forth facts about beer, about drunkenness in wine and beer-drinking countries, and the cost of drink to the community in degeneracy, crime, pauperism, insanity, philanthropy, and business. Here again the results of the scientific research work have been used in extending public knowledge of the facts about alcohol.

The press of America is one of the very greatest educational factors in our public life. It is now open as it has not been for years to facts pertaining to the alcohol question. It is the psychological moment for turning the power of the press into a great force for spreading the scientific reasons for intelligent sobriety. To seize upon this moment by systematically supplying the available and much-needed facts is therefore the timely and important purpose of one great branch of the work of the Federation.

In addition to the information sent out

through the public press, the Federation has published seven new leaflets representing 46,000 pages.

Including the 16,000 pages of Press Circulars and 1,180,000 pages represented by the SCHOOL PHYSIOLOGY JOURNAL, a total of 1,227,000 pages have been prepared and published. Exclusive of the JOURNAL, 75,306 pages, have been used in meeting requests for literature or information and 6,250 letters and postals have been sent out in correspondence with all parts of the United States and with 13 foreign countries.

HELPING THE CHILD TO HIS HERITAGE

Emphasis upon the supreme importance of thorough education of the children as to the facts about alcohol and other narcotics has been a large part of the year's work. To this end the SCHOOL PHYSIOLOGY JOURNAL has been chiefly devoted. Articles have been prepared for the press and special assistance has been given superintendents of schools and teachers. It is most of all important that appreciation by the general public of the value and necessity of this instruction should be deepened so that the instruction will be popularly as well as legally required, that forces should be brought to its support which are not now interested in it, or, at most, only half-heartedly. This is a matter that touches every home where there is a child. It is a great question of public welfare. Whatever else, therefore, may be done or left undone, the saving of the child from the perils of alcoholism and narcotism is a work that should command the co-operation not only of all temperance organizations, but of all forces working for social betterment.

The press and the school have necessarily been the chief avenues through which temperance educational work has been carried on by the Federation in the year past.

THE MEDICAL PROFESSION FACING ITS RESPONSIBILITY

Special plans are under consideration for extending this work among the other professions concerned in the moulding of public sentiment: ministers, public speakers, and especially physicians. Physicians, particularly, are turning their attention to the responsibility, and duty, of the medical profession toward the alcohol question. The *British Journal for Children's Diseases* said recently on this point:

"How comes it that parents so generally accept the current opinion that 'anæmia', 'debility' and the like are benefited by alcohol, and especially those forms of alcohol, such as

stout and port wine, the color of which most nearly resembles the blood? What effort is our profession making to counteract this absurd and harmful delusion? How many of our profession actually entertain this delusion even yet? . . . We cannot avoid our direct responsibility in this matter, and the more carefully we face our plain duty in these directions the more powerful will the influence of our profession become, and the higher the esteem in which it is held by the state."

IMPORTANT INTERNATIONAL AFFILIATIONS

The Federation had the honor of representation at the Stockholm International Congress Against Alcohol by two of its directors, Dr. T. D. Crothers and Dr. T. A. MacNicholl who were also official representatives of the United States, this being the first time our government had appointed such delegates.

At this Congress, an International Temperance Bureau was organized with purposes nearly identical with those of the Scientific Temperance Federation. Arrangements have been made for the close affiliation of the two organizations and the Federation will be known as the American branch of the International Bureau. At the initial meeting of the latter Dr. T. D. Crothers was chosen a member, with representatives of 17 other

countries, of the Central Committee of the International Bureau.

NOTE—Co-operation in the work of the Scientific Temperance Federation through Associate Membership [annual dues \$2.00] is cordially invited. Members receive the SCHOOL PHYSIOLOGY JOURNAL, notices of new books, samples of literature, access to information available, etc. Scientific and educational articles, reprints, bulletins, etc., received will be carefully indexed and filed. Address the Scientific Temperance Federation, 23 Trull St., Boston, Mass.



On page 71 we are glad to reproduce from *Our Little Folks** one of the scores of elevating and entertaining stories with which that charming "monthly for youngest readers," each year delights many thousands of children. If other parents understood the need of thus pre-empting the child's mind for the best reading before the poor and really bad can gain a foothold there, and were acquainted with this magazine so replete with choice illustrations, picture-puzzle and other stories, poems, etc., all original, and adapted to the interests and development of the child under twelve, they, too, would, if possible, provide *Our Little Folks* for their children. Samples on request.

*Our Little Folks, S. E. Cassino Co., Salem, Mass. See Journal Combination Offer.

Alcohol and the Human Body, . . .	\$1.65	} OUR PRICE
The Psychology of Alcoholism, . . .	1.62	
School Physiology Journal, . . .	.60	
		\$3.00

Making of a Teacher, . . .	\$1.00	} OUR PRICE
Postage, . . .	.12	
School Physiology Journal, . . .	.60	
		\$1.25

FAMILY GROUPS,

World's Work, ‡ . . .	\$3.00	} OUR PRICE
McClure's, ‡ . . .	1.00	
Delineator, ‡ . . .	1.00	
School Physiology Journal, . . .	.60	\$3.25

TEACHER'S GROUPS.

Normal Instructor, . . .	\$.75	} OUR PRICE
School Physiology Journal, . . .	.60	
		\$1.00

Normal Instructor, . . .	\$.75	} OUR PRICE
Primary Plans, . . .	1.00	
School Physiology Journal, . . .	.60	
		\$1.65

ALCOHOL AND THE HUMAN BODY.

Horsley and Sturge.

Alcohol and the Human Body, . . .	\$1.50	} OUR PRICE
Postage, . . .	.15	
School Physiology Journal, . . .	.60	
		\$1.80

CLASS A.

Success, . . .	\$1.00	} Any 1 with JOURNAL
Woman's Home Companion, . . .	1.00	
American (Leslie's), . . .	1.00	
Our Little Folks, (new) . . .	1.00	} Any 2 with JOURNAL
American Motherhood, . . .	1.00	
Primary Plans, . . .	1.00	
American Boy, . . .	1.00	} Any 3 with JOURNAL
Altruist, * . . .	1.00	
		\$2.50

CLASS B.

C. E. World, . . .	\$1.50	} Either with JOURNAL
Suburban Life, . . .	1.50	
Little Chronicle, . . .	1.50	
		\$1.70

‡Single subscriptions for full price only.

†This combination cannot be changed.

*Altruist and Journal, \$1.00

A GRAND PREMIUM OFFER

FOR NINETY DAYS ONLY

THE CUT SHOWS THE EXACT SIZE



EVERY PEN WARRANTED
THIS IS THE PEN

WE have been successful in closing a special contract with THE CONSOLIDATED FOUNTAIN PEN Co., of Brooklyn, N. Y., whereby we can supply a guaranteed **SOLID GOLD FOUNTAIN PEN,**

The "Celtric Model 1,"

To every subscriber, old or new, who sends us fifty cents for a year's subscription and fifty cents additional.

The "Celtric Model 1" compares favorably with any \$2.00 pen on the market today. The pen will be forwarded immediately upon receipt of the money.

A DESCRIPTION OF THE PEN

The stock is made of the best quality of hard rubber, beautifully chased, and fitted in four parts: the pen is 14-k gold, fitted with irridium points, and the feed is guaranteed by the manufacturers to flow evenly without leaking or blotting. Pen can be furnished with stub, medium, or fine pen point as desired.

**"A FOUNTAIN PEN IS A NECESSITY OF THE
TWENTIETH CENTURY"**

The Egyptians used a split reed; our grandfathers, a goosequill; our fathers, a steel or ordinary gold pen. But today we want

A Fountain Pen

that dispenses with the inconvenient inkstand, that does not corrode, and that is always ready for use. Bears the manufacturer's guarantee that the pen is solid GOLD 14-k fine. If it does not prove satisfactory in every way we will exchange it for another, or return the fifty cents additional, if the pen is returned within 30 days.

This is an unusual opportunity to secure, at a very low price, an article of superior quality that is coming to be essential to the comfort and convenience of every one who writes

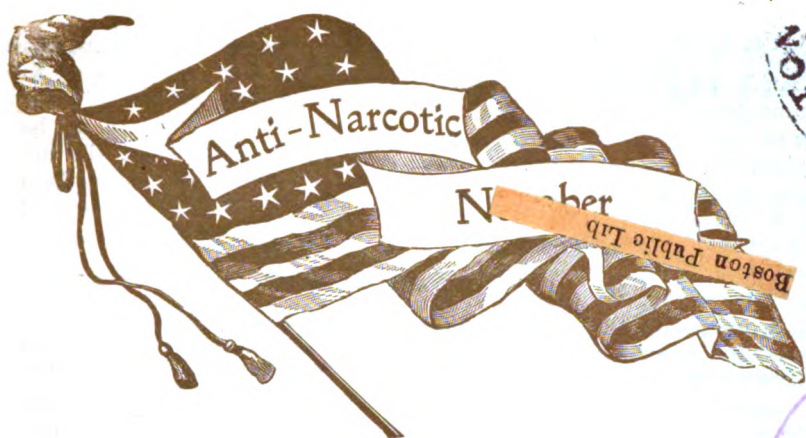
For Ninety Days Only, Journal and Pen, \$1.00

SCHOOL PHYSIOLOGY JOURNAL

23 TRULL STREET

BOSTON, MASS.

592



THE SCHOOL PHYSIOLOGY JOURNAL



• CONTENTS •

	PAGE
The Use of Tobacco—A Personal Letter to Young Men	81
The Self-Appointed Physician	84
Effects of Tobacco on Growing Boys	85
What We Do in Phillips School	86
Primary Lesson—First Year—Food and Drink	87
Editorials	90
Treatment for Chronic Nicotinism	91
School Luncheons	91
Reminiscence of Rev. Dr. Plumb	96

PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVII. NO. 6
FEBRUARY, 1908

OUR BOOK TABLE

*Graphic Tables on the Alcohol Question.** German thoroughness is evinced in this elegant volume of colored charts, diagrams, pictures, and photographs, illustrating the principal features of the alcohol question, and acquainting us with some of the leading specialties in this field. The subjects covered by the information shown by diagrams in accompanying text include the relation of alcohol to crime, working ability, disease, mortality, degeneration, economics, and phases of the temperance movement. The text of the present edition is in German, but translations will be made into other languages as the demand arises.

*Webster's New Standard Dictionary.*** High School and Collegiate Edition, has just been thoroughly revised, and the vocabulary enlarged. It now contains 832 pages; 900 text illustrations; 26 full-page plates, six in colors; Dictionary of Mythology, of Botany, of Rhymes, etc.; Scientific Etymology; Comparative tables of metric and English systems of weights and measures, and other excellent features. Well bound in black silk cloth, half leather, with special patented thumb index.

*Health Through Self-Control**** adds one more to the increasing list of really valuable books on the subject of health-building. The

author emphasizes the importance of correct breathing, right selection of food, and care of the nervous system. Much space is given to the science and art of habit-formation and the way in which the mind can build the body healthfully and make one better and happier. It is to be commended.

ALCOHOL IN BREAD NEGLIGIBLE

Owing to a typographical error last month, the word "grains" was twice substituted for the word "grams" in the following quotation and we herewith reprint it in correct form.

The quantity of alcohol even in new bread is practically negligible, for according to the careful investigations of Pohl (*Abstinenter Arbeiter*) the average amount of alcohol in 100 grams of bread is only .0657 grams (less than one drop). Estimating that a man eats 500 grams of bread (1.1 lbs.), a large amount, he would consume only .30 grams of alcohol per day (about four drops) the equivalent of the alcohol in 1/300 of a quart of wine (100 grams to the liter).

*GRAPHIC TABLES ON THE ALCOHOL QUESTION, by T. Stumf and Robert Willenegger. Price, \$7.50 and carriage. Orders may be forwarded through the SCHOOL PHYSIOLOGY JOURNAL.

**WEBSTER'S NEW STANDARD DICTIONARY, compiled by E. T. Roe, LL. B. Chicago: Laird and Lee. Price, \$1.50.

***HEALTH THROUGH SELF-CONTROL, by Wm. Anthony Spinney, A. M. 12 mo. Cloth. 310 pages. Boston: Lothrop, Lee and Shepard Co. Price, \$1.20.

The Latest Authorative Books on the Alcohol Question**Alcohol and the Human Body**

— BY —

Sir Victor Horsely, Hon. M. D., Prof. Pathology.
University College, London.

— AND —

Mary D. Sturge, M. D., Birmingham and
Midland Hospital for Women.

PARTIAL CONTENTS—Alcohol a Drug; Effect of Alcohol on Intellectual Processes; Degeneration and Disease of the Nervous System Due to Alcohol; Action of Alcohol on the Digestive System, Is Alcohol a Food; Effect of Alcohol Upon the Heart; on Power to Resist Disease; upon Children; upon the Race.

ABSORBINGLY INTERESTING

SCIENTIFIC AND UP-TO-DATE

INDISPENSIBLE TO EDUCATORS

370 Pages 16 Beautiful Plates 21 Diagrams

Price, \$1.50 Postage, \$.15

Alcohol and the Human Body,	\$1.65	} ONLY	\$1.80
Psychology of Alcoholism,	1.65		
Physiology Journal, one year,	.60		

Psychology of Alcoholism

— BY —

GEO. B. CUTTEN, B. D., M. A. Ph., D.,
(Yale)

A Summary of Research (750 references) covers whole ground of Effects of Alcohol on Nervous System, Intellect, Will, Emotions, Senses, Insanity and of Cures by Hypnotism and Conversion.

Shows Clearly the Relation

Between the Use of Alcohol and Mental States.

357 PAGES

20 ILLUSTRATIONS

Price, \$1.50 Postage, \$.15

Alcohol and the Human Body,	\$1.65	} ONLY	\$3.00
Psychology of Alcoholism,	1.65		
Physiology Journal, one year	.60		

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

School Physiology Journal

Vol. XVII

BOSTON, FEBRUARY, 1908

No. 6

The Menace of the Tower

By Edwin Parkham

In storied Venice, down whose rippling streets
The stars go hurrying, and the white moon beats,
Stood the great bell tower, fronting seas and skies;
Fronting the ages, drawing all men's eyes,
Rooted like Teneriffe, aloft and proud,
Taunting the lightning, tearing the flying cloud.

It marked the hours for Venice; all men said
Time cannot reach to bow that lofty head;
Time that shall touch all else with ruin must
Forbear to make this shaft confess its dust:
Yet all the while, in secret, without sound,
The fat worms gnawed the timbers underground.

The twisting worm, whose epoch is an hour,
Caverned its way into the mighty tower.
And suddenly it shook, it swayed, it broke

And fell in darkening thunder at one stroke.
The strong shaft, with an angel at the crown
Fell ruining: *a thousand years went down!*

And so I fear, my country, not the hand
That shall hurl night and whirlwind on the land;
I fear not Titan traitors who shall rise
To stride like Brocken shadows on our skies;
Not giants who shall come to overthrow
And send on earth an Iliad of woe;
I fear the vermin that shall undermine
Senate and citadel and school and shrine—
The worm of greed, the *fatted worm of Ease*
And all the crawling progeny of these—
The vermin that shall honeycomb the towers
And walls of State, in unsuspected hours.

—Selected.



THE USE OF TOBACCO—A PERSONAL LETTER TO YOUNG MEN

BY WINFIELD S. HALL, PH. D., M. D.

Professor of Physiology in the Northwestern University Medical School, Fellow of the American Academy of Medicine,
Member of the American Physiological Society

THERE are two reasons why I feel justified in addressing to the young men of our great republic a personal letter upon the subject of tobacco. In the first place, I have been associated with young men for many years in several institutions of learning and have come to know the young American in general, and several thousands of them in particular. In the second place, I have had personal experience with tobacco, and am very familiar with its effects upon the system, from having experienced all of its pleasures and many of its objectionable features. My readers will pardon me if I detail to them some of my personal experience with tobacco.

Beginning in my twenty-fifth year, while a medical student, I smoked one cigar daily for a period of about two years. I have always studied my own physical and mental conditions, and began to observe the effect of the tobacco upon me. I came to notice from day to day that during the smoking of the cigar there was a perceptible change of mental attitude toward my work and toward things in general. I would begin a cigar with mind all alert, ambitious to get at some work that needed to be done. After a half-hour of watching the smoke curl up toward the ceiling I was conscious of a falling off of mental

activity, and unless the work was imperative, I usually ended up by taking a half-hour stroll down Michigan avenue, to be entertained by a glimpse of its equipages and its people. I was conscious of a sort of "don't care" mental attitude toward things in general. I have never for a moment doubted that my change in mental attitude was to be attributed solely to the effects of the nicotine. I believe, in the light of subsequent observation, that it is just this effect of tobacco which makes it especially pleasing to people. If I failed to have my after-dinner cigar, I missed it so much that I woke up to the fact that I was slowly but surely forming a "drug habit," and through my medical studies I knew that a drug habit, whether for morphine, cocaine, alcohol, or other narcotic or stimulant, is harmful to the system in direct proportion to its use, and I knew that without exception all of these drugs enslave a person by gradually undermining his will-power; the more one takes the less he is able to stop. When I realized the situation, I stopped. For several years subsequent to the period referred to above, I smoked an occasional cigar. Each cigar produced again the feelings which made me discard its habitual use.

The young men of today are subjected to cer-

tain conditions which are less favorable to rapid advancement and facile success than were those which existed in the time of our grandfathers. In their time, great areas of our country were being settled and developed by pioneers. There was a dearth of men in all lines of activity. Consequently competition was slight as compared with the present conditions, when a notice in an evening paper—"Accountant Wanted"—brings a whole room full of anxious applicants and a hundred letters of application. The professions are all crowded; every line of business is over-full; competition is intense. To succeed, the young man must either be exceptionally capable by natural endowment, or he must use to the best advantage his average abilities.

Before entering the competition, which is society's balance in which every aspirant for success must be weighed, suppose a young man seek the advice of his elders as to what he can take or do to make his chance for success more certain or to make the success more complete. If he ask his father or grandfather, do you suppose he will be advised to begin the use of tobacco or opium or alcoholic beverages? If he ask a physician, will he be advised to begin the use of some drug,—as nicotine, morphine, cocaine,—which will blunt his sensibilities, take the edge off his alertness, and make him care less if his tailor's bill is unpaid? If he ask a lawyer, will he not be told to live strictly within his income and never to assume obligations which he can not meet on the day and hour of their maturity? If he ask his spiritual adviser, will he not be enjoined to conserve and to cultivate every power of body and mind? These powers are the capital stock of a young man. Knowingly to decrease the value or efficiency of one's capital is recognized by all men as a very poor business proceeding. The young man may remind us that his father and his grandfather, his legal advisor, his physician, and his pastor all smoke, even though they all with one accord advise young men not to follow their example. If these men just referred to have secured a measure of success, it was not because of their use of tobacco, but in spite of that habit. *It is usually more safe to be guided by the precept of our advisors than by their example.*

Though many professional men use tobacco, I have yet to hear the first one advise a young man or boy to begin its use. If asked whether they would advise a young man to begin the use of tobacco, they uniformly answer, "No." Most men who use tobacco regret that they ever formed the habit, but make no effort, or at best only ineffectual efforts, to stop it. This is the universal ex-

perience with a drug-habit, whether the drug be nicotine, alcohol or morphine.

Let us be frank in this discussion. We want the truth, the whole truth, and nothing but the truth. It is universally admitted by even the staunchest defenders of tobacco that it is harmful to the young and growing individual. Full growth and physical maturity is hardly reached before the age of twenty-five. Suppose that a young man begins at that age to smoke one cigar after each meal. Will it injure him physically or intellectually? I believe that there will be no profound disturbance of the health and no marked abatement of intellectual activity under the conditions just stated. This will depend, of course, largely upon the individual; but the average man will not be markedly injured. The question which the young man of twenty-five now asks is, "Why should I not smoke, then?" The most loyal friends of tobacco do not for a moment contend that tobacco in any form is beneficial. The most that can be said for it is that it gratifies certain of the senses.

Let us discuss briefly *this question of sense gratification*. There are five senses: The sense of touch, of smell, of taste, of hearing, and of vision. Animal organisms in general, including man, are endowed by nature with these senses for particular purposes; for protection from danger, for the discovery and selection of the proper food, drink and air, and finally for increasing the happiness or well-being of the race; The use of these five senses in the pursuit of any or all of these objects always results in their higher development. The exercise of any power or attribute of the body in a legitimate use gives the animal pleasure, exhilaration, and a consciousness of gratification. This experience of pleasure is nature's compensation for activity. Man has become very ingenious in devising means for sense gratification. It may be stated as a *general principle limiting sense gratification that those forms which benefit the individual benefit the race, especially posterity, while those forms which do not benefit the individual injure the race*. How will the useless gratification of sense injure the race? By adding to the moderate influence of heredity the very strong influence of environment; the two factors working together to *make the following generation less resistant to temptation*.

Students of humanity and society tell us that the race is more important than the individual, and that the great problems of society are those which deal with the comfort or well-being of the race. If this be true, it must follow that *any act which benefits the race is legitimate and to be encouraged, while any*

act which injures the race is illegitimate and to be discouraged.

If we accept the premises, it leads us inevitably to the conclusion that even the moderate use of tobacco by adults is to be discouraged, though we view the question from the standpoint of the physical effects alone. If we were to bring in questions of ethics, of "the greatest good to the greatest number," of economy, etc., we would be repeatedly led to the same conclusion, namely, that *the moderate use of tobacco by the adult is to be discouraged.*

I have never yet met a young man or boy who did not wish to succeed in life. Success in life, in these days of strong competition, means: Honesty, industry, temperance, economy. The boy or young man who has all of these, with good health, must succeed, while if he lacks any of them even a moderate success would be impossible.

To reach his highest success, a young man should be honest, industrious, economical, and a total abstainer. Such a young man is worth more than his weight in gold to a business house, if he stands the tests to which all new employees of a great and successful house are subjected. No young man need think that some special "pull" will shield him from these tests, or from the close observation of the men who manage the interests of the house. When he least suspects it he is being tested in each and every point enumerated above; he is being weighed in the balance. The history of New York, Philadelphia, Chicago, and of every other great commercial center in the world, will demonstrate beyond a shadow of doubt that *it is not the man with a "pull" who makes history; it is the man with a push.* The reason is not far to seek. The man with a "pull" depends upon the good will, the forbearance, the thoughtfulness, and frequently, the unselfishness, of others, while the man with push depends upon his own abilities and his own energy. The young man with push may be slower in getting a position, but once he is employed he will be retained by a business house, while dozens of young men with "pulls" will have been taken on trial, tested, and passed on to other fields or retained in subordinate positions.

Tobacco does much to undermine the suc-

cess of young men. Why? Because it is the entering wedge of two lines of dissipation, either of which may defeat success. The first line is the dissipation of money for things unnecessary. The second line of dissipation is that of sense-gratification. One uses tobacco partly because of its flavor and partly for the sedative action which it exerts upon the nervous system. It is just this sedative effect which steals away a young man's vigilance and alertness and handicaps him in the struggle for success. The use of tobacco paves the way to other dissipation by requiring a compensating stimulant to overcome its sedative effect and by making the common wholesome foods taste insipid and flat. A vast majority of drunkards were smokers before they were drinkers. The mental attitude and lack of resistance which permits a man to smoke is



"My strength is as the strength of ten
Because my heart is pure."

likely also to permit other forms of dissipation more destructive in their influence.



MANHOOD

"Not such alone as bravely may withstand
The shock of battle or with strenuous hand
Open the paths of progress every way.
We give too much to brawn and body; they
Are but the brute which evil may command
No less than good, and so subvert the land
They should support, the state in ruins lay.

Not such alone, but men whose souls are strong
To hate all evil and, whate'er betide,
To put all interest of self aside,
To shrink from public as from private wrong,
From fortune reared on trickery lies,
Deeming too dear the goods dishonor buys."

A SELF-APPOINTED PHYSICIAN

BY E. L. TRANSEAU

THE only reason for calling him a physician of any kind is that he assumes to prescribe medicine. He knows nothing of physiology nor of the physiological action of drugs, or if he does, he cares nothing for facts.

He has something to sell and he prescribes it for the complaints of summer and of winter, for use at home and abroad, when sick, when recovering from sickness and when afraid of being sick, or when only tired. He would have it kept in the medicine chest and in the pantry and used freely at all times.

This panacea is whisky, and the self-appointed physician is the whisky seller, who is now thrusting his prescriptions, embellished with all the attractions of the printer's art, into every home.

The worst of it is, there are people ready to swallow both the "ad" and the thing advertised. The magic word "medicine" pulls from their pockets money that would go far toward keeping them well, if spent for proper food, good air, rest and recreation when needed.

These gullible people who pay for the whisky "ad" get no "value received" for their money. The entire transaction is their loss and the whisky seller's gain.

Fortunately, there are people not so easily fooled, because they know a thing or two. They know that the more a man "braces" himself with whisky the more he needs bracing; that taking it when fagged today means getting fagged more easily tomorrow, doing less accurate work while under the whisky influence, playing out sooner, remaining out longer, growing old more rapidly. (1)

The physician of the whisky bottle pictures the white-haired old man coming in out of a snow storm and taking a glass of whisky to warm and fortify himself against illness. A good microscope shows that the body's true defenders against illness are weakened by the alcohol in the whisky. (2)

The well-informed old man finds a hot, non-alcoholic drink quite as warming as whisky and less disturbing to his heart and nervous system. He knows that good food and the ability of an uninjured stomach to digest it will enable him to store up energy for warmth when he goes out and for resistance against ills when he comes in.

Gathering courage from audacity, the whisky vender prescribes his goods as a stimulant and food for convalescents, up-to-date, genuine doctors to the contrary, notwithstanding. (3)

Undoubtedly individuals have survived a whisky addition to nourishing milk and eggs, just as in older times they recovered from vigorous cupping. But doctors today substitute treatments that can show a larger percentage of cures, and many who have found that their patients make better recovery without whisky in their diet, leave it out. They find no scientific justification for calling alcohol either a true stimulant or a true food since its final effect is to depress instead of to invigorate, to break down instead of to build up cell protoplasm. (4)

"Take a bottle of whisky along in case of accident," is the whisky doctor's advice to the traveler. The well-informed traveler knows that because of its responsibility in causing accidents and mishaps, the most appropriate label for whiskey is "bottled accident." He knows that a bottle of denatured alcohol and an alcohol lamp on which to boil his drinking water is a better safeguard than whisky; that ensuring a clear head and alert brain free from alcoholic influences is a better guarantee against misfortune. For entertainment in tedious hours, he puts a book or two into the corner that a man of less knowledge and poorer taste would reserve in his satchel for a whisky bottle.

Finally, having exhausted the medicinal possibilities, this misleading adviser nominates the social hour as the one where whisky is "indispensable."

Here we are clear of the medicinal glamour and face to face with the moral propriety of offering to one's guest a substance that can do him harm.

The social use of alcoholics is too large a subject to treat in a brief paragraph. It is here that the conscientious and well-informed are most needed—to make the frivolous consider consequences, to make the selfish desire the well-being of their fellows, to fire the ambitious with the lofty aim of breaking down, instead of blindly following pernicious custom, to make "distinction" stand for worthy deeds, for the helping hand instead of the tripping foot.

The social hour is a golden opportunity for forcing back into the savage past from which it came, drug-bought, artificial hilarity, and for putting into its place the deeper, lasting pleasures of sympathy, kindness, consideration, love, helpfulness, inspiration.

These are not drawn from the whisky bottle. They come from that divine part of man's nature which speaks from within when the brain is in condition to hear.

1 Eccles, Grutzner, Kraepelin. 3 Meyer, Journal, Am. Med. Ass'n.
2 Laitinen, Abbott, Delearde. 4 French, Destree, Demme.

TOBACCO AND GROWING BOYS

BY ISAAC THOMAS

Principal High School, Burlington, Vt.

UPON the effect of tobacco on the adult person, eminent physicians disagree, and quite recently some of the most eminent have defended its use, claiming that it was helpful and not hurtful. Sometimes, to me, these men seem to be trying to make a case rather than to be looking for the facts, to be advocates rather than seekers after the truth. However this may be, all will agree that the habit of using tobacco, even for adults, is an unclean, expensive and selfish one, and one often offensive to others.

But when one comes to the question of its effect upon growing boys, there is hardly room for difference of opinion, and I have never yet heard or read a serious defence of it even by the most ardent lovers of the weed.

Speaking simply as one who has been dealing in an educational way for twenty-five years with boys, I am prepared to say that its effect upon them is evil and evil only. Almost as soon as a boy begins to use tobacco these effects are noticeable in him in school; an increased inattention and loss of power of concentration; pretty soon, loss, or the losing of memory; increasing irritability and dislike to submission to authority, or, sometimes, a sort of stupor; and *invariably* a falling off in excellence of work so serious, in many cases, as to result in the dropping out of school. In personal appearance there are always to be seen loss in color and freshness, dullness or blurring of eyes, and loss of firmness in the muscles, a flabbiness that has no natural place in the young. *The boy always falls off greatly in his good looks.*

What can the school do to help in this matter? Here, as in too many cases, the home is the chief hindrance. A few weeks ago I noticed in one of my classes that a boy whose work had been almost uniformly good, was falling behind in it without any apparent reason and saw signs of tobacco using in his pallid face and loose, flabby lips. Wishing to be sure of my ground, I asked him, meeting him casually: "Do your parents know you smoke?" "Yes," was the reply, "I should not have dared to do so without their permission," and this was true. I talked the matter over with him, but seriously doubt that he will break off the habit, even recently begun, from which his parents might, by a single refusal, have saved him. *The school never fails until the home has first failed.*

In addition to the failure at home, the other principal hindrances are the presence on school faculties of teachers that use tobacco, and the prevalence of the smoking habit

among college students and professors. This is particularly true in a college town. In the face of these things, who will blame the boy too much if he is hard to convince that the use of tobacco is an evil thing for him?

However, the school can do much. We have been insisting, for two years or more, that boys known to use tobacco shall be cut off from places of honor in school organizations, particularly in athletics, and requiring them to give their word of honor before being allowed to serve in such organizations, that they do not use tobacco in any form. The response to such a restriction was so hearty and so large that the number using tobacco in the school has dropped by at least one half.



By speaking against the habit and urging reasons why it should not be begun, at every fitting opportunity, a feeling and sentiment in opposition to it has been awakened in the school, and upon this we must look as the most efficient means against tobacco using among school children.



HEROES

HILTON H. GREER

One dared to die. In a swift moment's space
Fell in War's forefront, laughter on his face.
Bronze tells his fame in many a market-place.

Another dared to live. The long years through,
Felt his slow heart's blood ooze, like crimson dew,
For duty's sake, and smiled. And no one knew.—*Ex.*

WHAT WE DO IN PHILLIPS SCHOOL

BY ELIAS H. MARSTON

Principal of Phillips School, Boston, Mass.

It will be generally agreed that children are born imitators of their elders and natural hero-worshippers besides. As long as their fathers and older brothers use tobacco, and heroes like General Grant are spoken of as invariably seen smoking, so long will these little imitators and hero-worshippers think, no matter how mistakenly, that they will not be "men" until they can puff a cigar. The problem of preventing the use of tobacco among them is not an easy one; we have this natural instinct to contend against, and the necessity of convincing the boys that *for them at least*, the use of tobacco in any form is injurious,—often very harmful.

To secure this last object, we use all the physiological arguments against the use of tobacco by the young people. We refer to the absolute prohibition of narcotics and alcoholic beverages to those who seek the highest physical perfection, and lay as much stress as possible on the danger of such substances to the young and growing child.

To work toward the former object, we try to make it *unfashionable* to use tobacco by arousing and concentrating the public opinion of the school against the use of tobacco in any form. In March, 1894, Miss Nellie M. Whitney, deeply sensible of the importance of this matter, and desirous of doing all that could be done to diminish smoking among the schoolboys, established what we call "The Phillips School Anti-Tobacco League." There is a general organization for the entire school, and a class organization in every room in the district. Each class has a president, secretary, and three directors. The general organization, managed by the highest class, includes a president, vice-president, secretary, sergeant-at-arms, and fourteen directors. The duties of all these officers are those that usually pertain to the offices named, and to see that the members are faithful to the pledge and that the general interest is kept up. Meetings are held by classes for the transaction of League business, and once or twice in the school year general meetings are held in the school hall, attended by *all the boys*, whether members or not of the League. The exercises consist of readings, recitations, and declamations against the use of alcohol or tobacco, singing, instrumental music, and especially reports from each class secretary in regard to the standing and progress of his branch of the League. A very tasteful banner is awarded for one year to the class making the best showing—usually one of the lower grades. The Phillips School is one of the largest boys' schools and

is located in three separate buildings; but the boys outside the main building come to the general meeting in the hall of the main building.

The most important thing of all is the "pledge." Boys who have taken this may, if they please, wear the P. S. A. T. L. (Phillips School Anti-Tobacco League) badge. The pledge is to be taken with the consent of the parents always, and binds the boy to refrain from the use of tobacco till twenty-one years of age, and to use his influence to keep other boys from contracting the tobacco habit. Perhaps some may feel that the time is too long; that it would be better to limit the promise to the boy's connection with the Phillips School; but a moment's reflection will show that the tendency of the longer obligation is to keep a hold upon the conscientious boy who may not stay long with us, but who will, we hope, become a missionary to other schools, and, furthermore, to carry the boy over *the high school period*, when the temptation to smoking is usually very strong.

But the question returns, "Do you get any results?" Here is a specimen:

GENERAL SUMMARY FOR MARCH, 1906

Boys in school,	1,215
Members of the League,	1,028
Boys who have once broken the pledge,	81
Twice,	33
Three times and dropped from membership,	24

Boys who faithfully kept their pledge,
926—90 percent.

We think it *does pay*, and we certainly have less smoking on the street and about the school buildings than was formerly the case. We believe, too, that we have a better, busier, and happier school because of the high standards and faithful work of the Phillips School Anti-Tobacco League.



A NEW COUNTERBLAST AGAINST TOBACCO

A serious indictment against tobacco is drawn up by the committee appointed by the British government to inquire into the question of physical deterioration based mainly upon the deleterious influence of the weed on young smokers. A London journal, "The Hospital," expresses the opinion that the evil effects extend to the second generation. Nothing is more certain, it says, than the fact that an unstable nervous system is frequently so transmitted, and a potent cause of this instability is "the daily saturation with a narcotic of the body of an under-nourished and intemperate man."—*Success*.



Primary Lessons

FIRST YEAR

FOOD AND DRINK

INTRODUCTORY

NOT long ago a young woman of fine character and magnetic personality graduated from an eastern college. Her unusual talent for and training in her chosen profession presaged a successful career, but within a year her health failed to such an extent that she was obliged to give up her work. The underlying cause of all her trouble was found to be in the fact that from childhood she had been permitted to eat rich, highly-seasoned food, whenever and wherever she pleased. Having never been taught either the wise choice of foods or the proper control of appetite, she continued the abuse of her digestive system while doing the severe brain work called for by her college course, with the result that even before the course was completed the overtaxed organs gave way, her work was seriously hampered and eventually what might have been a brilliant career was cut short.

If this were an uncommon story it would not be quoted here; but the pity of it is that thousands of children are thus being permitted by parents who are indulgent, or unfamiliar with hygienic rules, to ruin their chances of happiness and success, and it may be of upright character. Where children are allowed to eat large quantities of stimulating meats and rich, spicy foods, the appetite for the plainer, wholesome foods is vitiated and the digestive organs are irritated and inflamed. Add to this the lack of self-control engendered and the subsequent depression and misery of dyspepsia, and the reasons why some easily fall into drinking habits are not far to seek. Nor must it be forgotten that in many places it is not at all uncommon for children as young as these to be given beer and cider under the mistaken notion that such drinks are harmless and even beneficial to growth and strength. These are important habit-forming years, and for their own sakes, as well as for

those whose hygienic habits are one day to be formed by them, the children have the right to be taught simple rules for proper eating, and the reasons for the same as far as they can understand them, and to be warned against the alcoholic drinks likely to be met.

USES OF FOOD

A FEW days previous to the lesson plant some seeds in pots, planning to have some of the young plants larger than others. In anticipation of the lesson the children may be interested in watching the tiny plants unfold and be told that they get food for growth from the sunshine, the earth, and from the water given them. Leave the plants in one pot without water and cover those in another from the sun.

On the day of the lesson, the teacher may ask one child to bring a kitten or a puppy to school, another a china doll, and some mother to bring a baby.

Food for Growth—Keeping the doll and kitten or puppy and the baby in the background, bring forward the plants and question the children as to the growth of these plants. Why are some larger than others? How large will they be when they are fully grown? Mention some plants as small as these that grow to be very large. (Trees.) What did these little plants need in order to grow? Why did not those left without water grow like the others? How did those shut away from the light look? What, then, do plants need for growth? See that the children clearly understand that plants must have food in order to grow.

Show the kitten or puppy. How large was it at first? How large will it grow to be? What must be given to it every day? What kind of food does it like best? What does it drink? Compare this fat, well-kept little animal with a neglected one of the street. Why is this one larger? Draw from the class that the one of the street does not have sufficient food. What would happen to this little animal if it had its food only occasionally or not at all. Ask the children to name other animals and tell what they eat. Each animal eats the food which is best for it. Drop a little lesson of kindness to animals, showing that they suffer for food or drink when children neglect them. See that the children get the idea that all animals need plenty of the right kind of food, and of water, if they are to grow well.

Bring forward the baby. (If the baby is not available, the teacher may show some good picture of a baby, for instance "Baby Stuart," or may ask similar questions regarding the baby in some child's home.)

How large was the baby at first? How

much larger is it now? What is the reason? What must it have several times a day if it is to grow large? What kind of food does it eat? How do you know when it is hungry? What would happen if it or yourselves were to be given only a little food? Lead the class to see that no baby-plants, animals, or children could grow without food. Suppose they were fed only once a day, or were often forgotten and so fed only occasionally? What if they were fed too much or too often? See that the class get the idea that food must be taken regularly and in not too large quantities. Why is it not best to eat much between meals? (One is apt to eat so much as to get sick. Children grow best when they do not eat too much or too often).

Food for Repairs.—What happens to your toy horse and dog when you have played with them a great deal? Speak of how playful the kitten and other little animals are. If the kitten plays by itself and you play with it why does it not wear out as the toys do? What do you do much of the time when out of school? Why do not your bodies wear out as toys do? If the toy horse broke its leg would the parts grow together again? If a person were to break an arm what would happen? If one cut the flesh or scraped the skin off? What do you and the animals do that the toy dog or horse do not? Can you think now of something else that food does for us? Show that food not only helps us to grow but also helps mend our bodies and keep them from wearing out.

Food for strength.—Which would be the more playful, the poor little street animal or the well-fed one? Which child could play better, one that ate good food or one that was sick and could eat only a little? Which horse could do the more work, one that had plenty to eat or one that had to go hungry? Which man would be stronger, one who ate plenty of good food or one that was unfortunate and did not have what food he needed? What is another reason why we eat nourishing food? Lead several members of the class to make the statement that good food gives us strength to play and for work.

Food for Warmth.—Let one child feel of the kitten and another of the baby, and others of their own flesh. What is the feeling. Let one or two others touch the doll and report that it is cold. Are children and animals always warm? What about the doll or the toy dog? If you were to wrap the doll warmly would it then be warm? Why not? Yes, the children and the animals are alive. We know that the food keeps us alive, and it also keeps us warm. You may tell me now what the food does for us and I will write it on the

blackboard. Copy the sentences neatly in your Hygiene note-books.

Food helps us to grow.
Food keeps our bodies from wearing out.
Food helps to mend parts of our bodies.
Food makes us strong to play or to work.
Food helps to keep us warm.
Rich, spicy foods are not good for children.
Food should not be eaten too often.

WHAT SHALL WE EAT

Call for volunteers to tell the different reasons why we need food and review the latter carefully that the children may have them clearly in mind.

Milk.—How do we know when we need food? How does the kitten ask for food when it is hungry? the puppy? the baby? What kind of food does each eat when small? What, then, is one kind of food that is good to keep little ones warm and make them grow strong and well?

Eggs.—How many have seen a little chicken. If anyone has, let him tell that the chicken was warm and was strong enough to run around almost as soon as it was out of the shell. Explain that it had been growing for sometime inside the shell. What did it live on then? If the children do not know, tell them that it was feeding upon the white and upon the yolk of the egg. There was food in the egg which helped to keep the baby chick warm, and to grow large and strong. Eggs are just as good for us as they are for the chickens. They should not be boiled hard or fried. They are best for us when soft-boiled, poached, or made into custards or puddings.

Grains.—Show grains of wheat, barley, rice, oats, and corn. Let the children name each. What good foods can be made from the wheat? Who can tell what is done to the wheat before it can be made into bread? What do we like to eat on bread? Bread will help our bodies grow large and strong and the butter on it will help to keep us warm so you see bread and butter is a fine food. What other good foods can be made from wheat? Let the children name the different cereals made from wheat and show that with cream or rich milk they are good like the bread and butter.

Which two of the grains are given to the horses to make them strong? How do we eat oats? corn? Lead the children to see that oatmeal, and corn or brown bread will help make them strong. Barley makes good soups. How do we like to eat rice? All the grains are very good for us. We will write their names on the blackboard.

Vegetables.—Name some kinds of food that grow in the garden. Yes, vegetables and

fruits. How many vegetables can you name? Most of these are good for us when they are cooked soft. At which meal is it best to eat vegetables?

Fruit.—Name as many fruits as you can. Which ones grow near here? Which are brought from far away? Which grow on trees? on vines? on bushes? What is likely to happen if we eat green apples? Show that all green fruits are unwholesome, unless they are cooked. Ripe fruits are pleasant and wholesome. We should not eat them at night or between meals.

Meat.—Who can tell another kind of food, which we eat most often at dinner? Yes, meat.

Tell the story of the kittens that had been fed on milk and then were given meat instead. At first they were gentle and nice when the children played with them, but after they ate so much meat they were bad-tempered and scratched and bit so that the children could not handle them. Explain that too much meat is also bad for children. They may eat a little boiled beef or mutton, chicken or fish, but none of these should be fried.

WHAT TO DRINK

Our bodies need a great deal of water. When we need a drink how do we know it? What do the bird and chickens drink when they are thirsty? the kitten and the puppy? the horse and the cow? If all the creatures drink water what do you think would be the best drink for boys and girls? for everybody? Nothing can quench thirst like water. Mary says some of the animals drink milk and she is right in thinking that milk is a good drink. We must not forget that milk is a good food as well as a drink. It is best to drink milk at meal-time.

Coffee and tea are not good for children.

There are some other drinks that are very harmful to children and to grown people. They are drinks like beer, wine, cider or whisky which contain the poison, alcohol. (A poison is that which when taken into the body, can harm the body or destroy it.) Did any of you ever see a cat or dog drink cider or beer? Animals are too wise to drink such beverages. These drinks make one more thirsty and instead of containing food like milk they contain the poison, alcohol. Famous doctors tell us that children who drink cider or wine or beer are not as likely to grow well or to learn their lessons easily as others who do not drink beverages containing alcohol. Such drinks sometimes cause men who drink them to become unkind and do very wrong things. Alcoholic drinks are dangerous to everybody because if one keeps drinking them even in small quantities he may

grow to like them so much that he cannot stop although he wants to and knows that they are doing him great harm.

Milk, eggs and grains are fine foods
Vegetables and fruit are good foods.
Children should not eat much meat.
Water and milk are the best drinks.
Beer, wine and cider contain alcohol
Alcohol is not food but poison.

"Temperance in eating,
Temperance in drinking,
Shapeth our body aright.
Temperance in speaking,
Temperance in thinking,
Maketh our souls lily white."



"Feeding her birds."

We regret that unavoidable delays at the printing-office make this issue late. We expect to be able to mail the March and succeeding numbers of the JOURNAL not later than the 10th of the current month.



We should try to impart to the atmosphere of our earthly homes some trace of that heavenly home where our Father abides.

My Father's house has many rooms,
And each is fair;
And some are reached through gathered gloom
By silent stair.
But He keeps house and makes it home
Whichever way the children come.—*Exchange.*

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

THE STRENGTH OF TEN

EACH YEAR the JOURNAL issues a special anti-narcotic number, although much space is given each month to this subject which is one of the most pressing in present educational work. The cigaret evil is admittedly undermining the physical, mental, and moral qualities of thousands of young people, and unless it can be checked, the thoughtful citizen may well look into the future of his country and race with deep anxiety. The JOURNAL has endeavored in this number to cover many of the aspects of the tobacco question with which the teacher has to deal and takes pleasure, therefore, in presenting to its readers articles from physicians and teachers, supplying facts which may be used in teaching, methods of eliminating the tobacco habit, suggestions for meeting the arguments which boys raise for indulging in the use of tobacco, an appeal to the young man's desire to succeed. The struggle is a many-sided one. Scientific studies of the effect of tobacco are increasing, and thereby enlarging the knowledge available to an adequate understanding of the physical basis of the habit. The evil must be attacked simultaneously from many points. The integrity and the pride of the race are at stake. How far the strength and purity of young manhood are to be conserved depends upon the earnestness with which the parent and the teacher by example, instruction and precept, individually and unitedly set themselves to overthrow this present evil and future peril.



KEIN WARUM OHNE DARUM

BILL-BOARDS have lately been embellished with a poster representing a man engaged in hard manual labor. At the top in large letters run the words, "Do you work hard," and

beneath, the information is given that "—'s Ale is as good as a dinner pail."

This advertisement is but one of the many that are thrusting before the eyes of children and youth, bald, unqualified, inaccurate statements about alcoholic beverages, destined to mislead innocent victims into their use unless the truth is made known.

Something more than instruction or exhortation as to the beauties of temperance and self-control is obviously needed under these circumstances. Something more, even, than example given by the earnest teacher.

The makers and sellers of alcoholic drinks have practically abandoned the morality argument. The ammunition which this enemy of life, home and the nation is using is definite assertion under the guise of facts, and the school can no more expect to defeat his object by mere moral or ethical instruction as to the advantages of abstinence than a besieged city can defend itself from the bullets and cannon balls of an invader by merely teaching its people the advantages of peace, or by trying to defeat his twentieth century weapons of warfare with the bows and arrows of the first century. In either case, the positive instruction will call out from an intelligent child or citizen the question, "Why," and as the German proverb says, "There is no *why* without a *because*." The "because" in this case is the facts as to the real nature and effects of alcoholic drinks.

The moral aspect of temperance teaching is indispensable, but it has permanent value and convincing power only as it rests upon a rational, thoroughly comprehended basis of facts as to the inherent nature of alcoholic drinks and their effects.



HYGIENE AND SOCIAL EDUCATION

A RECENT report of the New York Health Commissioner emphasizes the value of the dissemination of proper knowledge in diminishing tuberculosis. A Massachusetts legislator has introduced a bill calling for the better instruction of school children for a definite number of weeks each year in the laws of health and especially concerning tuberculosis.

We have long been educating the child for his own sake. More recently education has taken a social trend and we have added the social to the individualistic conception of education. Business competition, the sense of the interrelations of society are rapidly beginning to demand that men and women be trained to such intelligent obedience to the laws of health that they shall ever be at their best for the demands that life makes upon

them as members of the community. Thorough instruction in the laws of health (and this must include the reasons for sobriety) is a fundamental part of the social education of the child.



TREATMENT OF CHRONIC NARCOTISM

BY T. D. CROTHERS, M. D., HARTFORD, CONN.

THE user of tobacco is sick, enfeebled and diseased in a degree. His nervous system is injured. His nutrition and power of repair are lowered, and states of poisoning and starvation are manifest in the craving for tobacco to cover up the uncomfortable feeling and relieve the sense of pain.

The young man who uses cigarets is more seriously poisoned by them than by any other form of tobacco. This is because the combustion is carried on so near the mouth that most of the products are absorbed by its membranes and the poison thus taken up is far in excess of that absorbed from a larger amount of tobacco used in a cigar or pipe.

The pipe or cigar smoker takes in a small quantity of nicotine which is absorbed and retained in the system. The continuous use is followed by accumulated injury and lowering of the vitality of both the nerves and cells of the body. In the chewing of tobacco, the effects fall most heavily on nutrition.

I would recommend that tobacco be entirely stopped at once, and for the first two or three weeks all companions who are smoking should be avoided. If the man or boy feels inclined to smoke, let him take some compressed hops in the pipe and use this instead of tobacco, smoking them until all desire for smoking is gone. They will take its place effectually, especially if he smokes at night.

When the tobacco is chewed, substitute chamomile flowers, which can be bought at any drug store, and keep them in the mouth as long as possible.

I have been accustomed to give patients, struggling out of the tobacco habit, one or two pills of hops (*Lupulin* three-grain pellets), every night for a week or more.

The sooner the accumulated nicotine poison can be eliminated from the system, the sooner the craving will cease, that is, the nerves be freed from the irritating poison and reduced to their normal tone. Turkish, or very hot baths, taken once a week, with daily sponge baths of cool or tepid water, are the best methods of hastening this process.

With this treatment the patient should keep out of doors, exercising enough so that he will be tired when night comes, and he should sleep in a well-ventilated room.

If the appetite is poor, his physician will tell him of some good tonic.

The struggle will be over in a short time and the increasing vigor will bring renewed confidence.



SCHOOL LUNCHEONS

BY MARY R. MC GUIGAN

Principal High School, Charleston, W. Va.

AS PRINCIPAL, I favored the adoption of one daily session for the high school. The pupils were glad of the earlier dismissal, but before long complaints began to be made that the cold lunches eaten during the short nooning were injurious to the more delicate girls.

After much deliberation the present system was adopted, and has now been in successful operation for three years. A sink and a gas plate were placed in one of the basement rooms of the school building which was also fitted with tables and a long counter. A second room was furnished with tables and benches especially for the girls. This expense was borne by the board of education. A supply of plates, soup-bowls, cups and saucers, spoons and forks, with necessary cooking utensils, was purchased and paid for from the proceeds of the lunch-room.

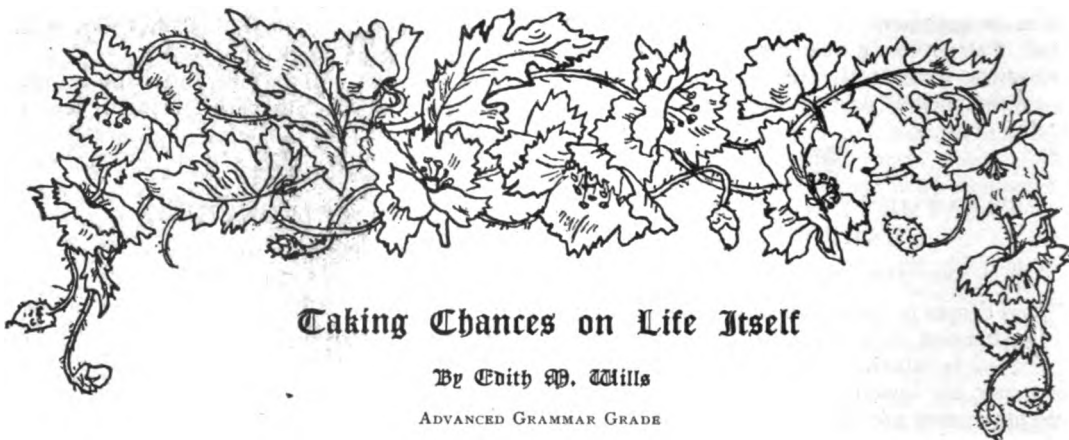
A cook hired for one dollar a day, prepares the lunches, washes the dishes, and cleans the oil-cloth-covered counter and tables.

One of the teachers sells the lunch tickets before school in the lunch-room. These are in denominations of one, two, three and five cents.

Another teacher has charge of the menu. Today a pupil could buy a bowl of hot vegetable soup and crackers, or a ham sandwich, or a cup of hot chocolate for five cents; a glass of milk for two cents; or a bread-and-butter sandwich for one cent. The bill of fare varies from day to day.

Pupils enter the lunch-room by one door, pass in single file to the counter and select lunches, which may be placed on a tray or carried otherwise. They pass to another teacher who sees what is taken and collects tickets therefor. The girls pass out of another door into their eating-room. The boys eat at the tables in the first room. Serving requires about ten minutes. Pupils may bring their own lunches (many do so), or they may bring part and buy part in school.

Prices are kept so as to cover cost, with a very small margin for incidental expenses. The board of education pays for the fuel (gas) consumed. On an average seventy-five or eighty lunches are served daily. Some girls assist in serving.—*Harper's Bazaar*.



Taking Chances on Life Itself

By Edith B. Mills

ADVANCED GRAMMAR GRADE

IF ever two brothers were devoted comrades and chums, Gordon and Harold Emmons were, and it was a real grief to both when, three years before, Gordon, the elder by five years, decided to go to a distant eastern city and pursue a medical course. Now he had come back to spend a summer on the farm and at the first opportunity, the two brothers went off for a long stroll in the woods to renew the old pleasant intimacies.

Harold listened entranced while Gordon recounted a hundred college experiences, both grave and gay. He drew him on to tell in a modest way of the high rank he had taken in his studies, the athletics in which he had excelled, and of the brilliant young professor who had taken special interest in his work. When he spoke of the latter his eyes kindled. "I tell you, Harold", he said, "Prof. Ball is just splendid. He is white clear through, a friend to all our men, and there isn't an athlete in college who is more finely developed than he. He says it's a man's duty to himself and his country to keep his mind and body in perfect condition and he can't do that if he uses drugs like alcohol and tobacco. When he studied in the German university he made a special study of the narcotic question, so being right up to date, he knows what he is talking about."

Harold listened thoughtfully and finally in a burst of confidence, said, "I don't believe in using alcoholic drinks and I never mean to, but I don't think tobacco ought to be classed in with them. The fact is," and in spite of himself he reddened under his brother's sympathetic gaze, "I smoke some, though Father and Mother don't know it. I began with some of the high school boys pretty soon after you went away. We enjoy it and it doesn't seem to hurt us."

"Oh, Harold!" was all his brother said for a little, and then he went on, "I knew that you were not in the pink of condition in which

I expected to find you, and I feared something of this sort. Old fellow, I can't have you mortgaging your future in this way."

If any one but Gordon had ventured thus to rebuke him even in the most tactful way, Harold would have been greatly offended, but coming from his comrade-hero who "knew things," it was taken more gracefully. Still he was not ready to admit that his smoking would hurt him in any way.

"Let us look the matter squarely in the face," said Gordon, "what concerns a man's future life and success is worth at least a candid examination."

"That's right," rejoined his brother, "I am perfectly willing to discuss the matter. Bring on your arguments."

"Very well then, I may mention a fact that perhaps would not have influenced you so much when you began but ought now to have weight. It will grieve Father and Mother very much to know that you smoke and," very gently, "is it quite fair to them to form a habit which is contrary to their judgment and wishes? When they have made such sacrifices to give us a good start in life, don't we boys owe it to them to respect these wishes?"

"Ye-es, I suppose so," replied Harold. "But a man has to use his own judgment about these things."

"But you weren't a man when you began this you know," said Gordon good-naturedly. "You aren't really your own man till you begin life for yourself. They have a direct interest in your health, and while they are educating you at least, you belong to them. Then if you have been smoking for three years and continue it, using more and more, as men usually do, by the time you graduate you will have spent nearly enough to clothe yourself during your college course."

"There is something in what you say," said Harold, "but of course I shall work and help

out with the bills, and anyhow, it costs me only ten cents a day with a few extras."

"That may be," said Gordon, "but the money uselessly spent is gone just the same and they will have to make it up. By the way, suppose you figure up what the habit will cost you by the time you are fifty years old. Your ten cents a day and extras make at least \$40 a year."

Harold was quick at figures and presently a low whistle showed that the results were unexpected.

"For the thirty years it amounts to \$1,200 and with compound interest about \$800 more," he said. "Who would think it would amount to so much?"

"Surprise number one," said Gordon, "do you think the pleasure (?) is worth the money, and are you prepared to work hard for two or three whole years to support the habit?"

"It does seem to cost more than I thought," Harold admitted, "but it is sociable and a man has to have some pleasure,—'all work and no play' you know."

"The professor says," replied Gordon, "that there is no way of getting so much real, satisfying pleasure out of life as by keeping one's youthful, abounding vitality for work and play, and I believe he is right. I shall never forget that talk that the professor gave us at the club-room one night."

"First he explained in general that until recently the nature and effects of tobacco had not been well known and even yet there is much experimental work to be done. However, it is known to contain the deadly drug nicotine and when the tobacco is smoked other powerful poisons like ammonia, pyridine and monoxide gas are liberated. The tobacco poison accumulates in the body because the system does not usually eliminate all of it."

"The ammonia irritates the mouth producing an unnatural thirst; the pyridine produces effects similar to those of cocaine; and the carbon monoxide of which there is considerable, diminishes the amount of oxygen carried by the red blood corpuscles. But the nicotine is the most poisonous of all."

"Of course nicotine is poison," said Harold. "Everybody knows that even a small amount will kill animals as quickly as prussic acid, and then there is that story by Hildebrand of a whole squadron of hussars who tried to smuggle tobacco by hiding it next to their skins and it made them all sick. But even if it is so poisonous, it can't hurt me because people say that the nicotine is destroyed when the tobacco is burned."

"Yes," replied Gordon, "one of the men told Professor Ball that very thing, but he

bowled the argument over at once. He said it was true that some have made that claim, but experiments like those of Kissling who recovered from the smoke 52 per cent of the nicotine consumed, proved that the nicotine was not entirely destroyed by burning. Another scientist [Schutscherbak] proved that a part of it was actually absorbed into the body and produced the typical effects of nicotine poisoning. White found that as little as 1-30 of a grain of nicotine produced appreciable poisonous effects. So you see one need not absorb much to be injured."

"Then he went on to say that the effects of the first use of tobacco were really an illustration of the acute poisoning and a foreshadowing of the effects of chronic narcotism. What were those effects, Harold?"

"Why," said Harold, "I was dizzy, had cramps and was awfully sick at the stomach; I trembled all over and couldn't breathe nor see very well; my heart beat fast and then slow, and I was so faint and sick that it seemed as if I were going to die. After some time I tried it again and had less trouble."

"I think it uses them all about the same," said Gordon; "some of the men were willing to tell the professor their first experiences so he could explain them. They were pretty much like yours, except that one, whose father and grandfather had smoked, liked tobacco at first and it never made him sick at all. Professor Ball said that undoubtedly he had inherited some peculiarity of the nervous system which gave him an apparent tolerance of tobacco, but that the nicotine would be likely to tell on him sooner and more severely than on the others."

"When one continues to smoke, the membranes of the mouth and nose become irritated and dried and more sensitive to throat diseases and some physicians think that in rare cases cancers are formed. Then it often happens, especially where the smoke is inhaled, that the upper air passages are so irritated that the smoker gets a hacking cough and chronic bronchitis which may prepare the way for consumption."

"I don't believe that happens very often," said Harold. "Still," he continued, thoughtfully, "Frank Martin went that way, but he smoked cigarets, and nearly all the time. I control myself. No habit shall conquer me."

"But Frank Martin smoked only a little at first just as you do," suggested Gordon. "Don't you remember his saying once when he was sick that if he could only have kept on using a few a day as he did at first, he would not have ruined his health? He said that the habit grew on him till it mastered him."

"Yes, but his was an extreme case."

"I trust it was," replied his brother seriously, "yet Professor Ball said he had known of several such cases. But professor showed that after all the greatest damage tobacco does is deeper and more subtle, being as he said, foreshadowed by the sickness from its first use. It strikes in the dark at a man's eyesight, at his brain and entire nervous system, at his self-control, at his heart, at life itself."

"Now Gordon, I think you are putting that too strongly. I don't believe either you or the professor can support such statements."

"Why chum," said Gordon reproachfully, "do you think I would exaggerate? You know as well as I do that I can't gain anything by it and besides," laughingly, "it isn't scientific to exaggerate."

"It is this way. The system revolts violently from the first poisoning, but when the doses are repeated, the nerves become somewhat narcotized, and it tries to adjust itself to the situation. The man no longer feeling these effects is deceived into thinking he is not being harmed."

"In the first place, a certain amount of poison is being taken into the body every day and this the system tries to eliminate, using force that ought to be expended in physical or mental processes. If your vital forces are used fighting needless battles, you can not have their power for necessary work any more than soldiers can be engaged in building up the commercial greatness of their country while engaged in military operations. In battle some soldiers are always crippled, so here the constant conflict weakens the vital forces and the enemy not being entirely destroyed, stays to make more trouble."

"Your dizziness showed that the brain was affected and your nausea indicated that some of the poison reached the stomach, probably in the saliva which you swallowed while smoking. This will always be the case. Chronic tobacco users often have poor appetite and digestion, in some cases, confirmed dyspepsia, and owing to poor nutrition, marked anaemia."

"Your muscles trembled so you could hardly stand because the motor centers were temporarily paralyzed and the muscles could not be properly controlled. How many smokers of fifty years of age do you know who have a steady hand?"

"Oh I know there is once in a while one who can't lift his coffee cup steadily, but I guess most of them can," said Harold.

"You may be as good a guesser as the best of the Yankees are said to be, but if you will carefully observe a dozen middle-aged smokers I think you will see that you need to

guess again," laughed his brother. "What about Dan Roberts who had to give up his fine position as linotype operator on account of tremulous muscles?"

"Honestly, Gordon, do you really believe tobacco caused his trouble?"

"There is no doubt of it," replied his brother. "Expert Stubbs in his book of instructions for the linotype machine says that tobacco as well as alcohol, if used habitually, will destroy the nicety of touch, and moreover, I happen to know that the nerve specialist told Dan so."

"Do you think there is danger that if used moderately as I use it, it may hinder me in my electrical engineering?"

"I am afraid there is," replied Gordon. "And in more ways than that one, too, for nicotine frequently injures the eyes and there is no doubt that it tends to impair brain power."

"If doesn't seem as if it could, but perhaps it can," said Harold, thoughtfully. "What else?"

"Worst of all the drug narcotizes that great vital knot, the *medulla*, and especially its nerve centers controlling respiration and the heart. You could not breathe very well both because the smoke irritated the lungs, and because the tobacco thus indirectly affected the respiratory muscles and blood vessels. Many habitual smokers, as you know, are troubled with difficult breathing. It appears seriously to interfere with growth of lung capacity, for Professor Seaver of Yale found by comparing a number of students who did not use tobacco with others who did, that the abstainer gained in that respect 77 per cent more than the others."

"These are facts to be reckoned with if one hopes to be an athlete," said Harold.

"Not only by athletes, but by every man who wishes to live a healthy, efficient life," Gordon replied.

"I suppose you are right," Harold assented. "Can you tell me how tobacco could give me such cramps as I had?"

"I am glad to have you ask questions as if you really wanted to know. I was afraid you would think I was preaching," said Gordon. "I don't want to do that, but I do want to make it clear to you, as the professor did to us, that smoking is not the harmless amusement so many think it is, but really a menace to health and success. For instance, these cramps illustrated one of the peculiar and dangerous effects of nicotine, what 'we physicians' call the 'tetanic' or constrictive effects. These are apt to be marked in the walls of the intestines [Nasse] and especially so in those of the arteries, in the latter case interfering with the circulation and perhaps eventually

causing the serious and often fatal disease, *angina pectoris*. [Huchard].

"The thought of possible heart disease chills the blood, and yet thousands of youths deliberately form this drug habit in spite of the fact that tobacco injures the heart more than any other organ except the brain. You could not believe me when I said that one who uses tobacco always takes chances on his life, but here alone is a full explanation."

Harold almost shivered and keenly scanned his brother's face to see if, after all, he might not be simply trying to scare him. But even as he looked he was ashamed of his momentary treason. "When has Gordon ever been anything but true?" he asked himself almost fiercely. "Why, he would die for me any time," and he felt instinctively that if his conservative brother spoke thus seriously he must recognize danger when he himself could not see it. So he said, affectionately, "Explain 'Doctor' what you mean."

The "doctor" thus invited, went on. "You know that always health depends upon good circulation. Where life hangs in the balance as it usually does in diseases like typhoid fever or pneumonia, very much depends upon whether the heart can support the extra strain until recovery can take place. The man who has a strong heart has at least a fighting chance for life no matter how severe his disease; he who has a weak heart may not survive some slight attack."

"Yes, I can see that that is true," said Harold.

"Now then," continued Gordon, "let us see how one who habitually uses tobacco wastes precious vitality, and may be throwing away his fighting chance for life. These facts now seem well established: chronic nicotine poisoning can injure the heart itself by producing fatty degeneration of its muscular tissues; and, second, the gradual hardening and constriction of the arteries has a tendency to force too much blood into the heart causing frequent dilatation and thus a weakening of the heart walls.

"But this is not all. The temporary effects shown by the violent palpitation and extreme faintness indicated the nature of the poison-

ing which though much less marked than at first, has been present each time you have smoked. If the pulse rate and blood pressure are unnaturally raised or lowered quite often, even if only a very little, what is at first only functional derangement tends to become an organic disease which may appear in several serious forms, one of which is the well known 'smoker's heart.'" [Huchard].

Harold considered. It certainly *was* reasonable that if, as Gordon said, the nervous system and the heart were daily irritated by the nicotine and nearly always a little more of it was taken than was eliminated, chronic poisoning and heart disease might be expected. But he did not wish to admit it for then the only logical thing for him to do would be to stop smoking at once, and that he did not wish to do. Then a ray of hope came, and he said, "Yes, theoretically it is reasonable,



" 'Tis splendid to live so grandly, that long after you are gone
The things you did are remembered, and recounted under the sun."

but practically it doesn't seem to work so very much mischief. I know ever so many men who have used tobacco for years and it hasn't seemed to hurt their health. Old 'Grandpa' Banks lived to be past ninety. How do you explain that?" the last with a little air of triumph.

"That is a fair question," said Gordon, cordially, and deserves to be fairly met. One of the answers to your objections is found in the fact that some people have a peculiar faculty of throwing off poisons, seeming to be unharmed by quantities that would actually kill others. Then there are usually other reasons, as in the case of 'Grandpa' Banks. Here was a man who came from a temperate, long-lived race, who had always lived very simply and quietly, much of the time in the open air, and, mark you, one who waited ten years longer than you have before

beginning his always moderate use of tobacco. But if you could examine the facts in a large number of cases of very old people, you would find that more women than men live to advanced age (why?) and that among the men, the tobacco users are in the minority. Would you recommend abstinence from bathing as a life preserver because that Indian of 100 years we saw last summer had never bathed?"

"Well, hardly," said Harold, laughing heartily, for he saw he was caught. "Perhaps the less said about 'Grandpa' Banks the better, but you can't deny that many business and professional men and even statesmen, are smokers and it doesn't seem to hurt either their minds or their bodies."

"Neither can you deny that undrugged brains are undoubtedly best or that many of these same business men, and corporations even, prefer non-smokers, and absolutely refuse to employ cigaret users," retorted his brother.

"Besides the effects of the nicotine, like those of lead and other poisons, may not be apparent to even a scientific observer for a long time. You remember Mr. Mills, our painter, *seemed* in good health only a week before he died of the cumulative effects of lead poison."

"Probably it does hurt some people," said Harold, reluctantly giving ground by inches. "I can leave it off if I please, but I don't believe it hurts me."

"Better take a thorough physical examination before saying that," said his brother. "Facts gleaned at Yale and elsewhere proved that abstainers have the advantage in scholarship and in bodily development. Think, too, how many young men who thought themselves perfectly well, were found to have 'tobacco heart' and rejected at the time of the Spanish-American war. If you can leave it off as you say won't you do it now to please me, even if you don't feel any bad effects?"

"You know, Gordon, I would do almost anything in the world to please you, but I *need* it, for once or twice when I have left it off I couldn't eat, and I was so nervous that I was nearly crazy. I don't feel like enduring so much discomfort when I am not sure I need to do so. Of course, if I knew it would harm me as it does some, I would quit anyhow."

"But my dear brother, can't you see that the very fact that you suffer so when you stop using the drug certainly proves that it is injuring you and that the damage to your nervous system is already considerable? You are a sick man now, and the only remedy is complete abstinence from the narcotic which causes it. To refuse to apply that remedy because it will be painful for a time, is to al-

low an insidious disease to run on, you know not where, because you lack the resolution to cure yourself. If the treatment for this disease of the nerves is painful, it is no different from that for many others. If feeble women endure severe treatments when necessary to healing, can't you, a strong man, do as much?"

"I can, and *I will*, today," said Harold, resolutely.

"Put it there old man," said Gordon, in a proud, if husky voice, as he held out his hand. "I knew that was what you would do as soon as you understood the real nature of 'King Nicotine.' The breaking away won't be so bad as you think either, for there is much that can be done to alleviate the distress and shorten the process. We will follow the doctor's directions and soon you will no longer crave the tobacco. Then we shall know that your narcotic nerve disease is entirely cured. We shall yet have a crack athlete in the family."



A REMINISCENCE OF DR. PLUMB

BY WM. A. MOWRY, PH. D.

HYDE PARK, MASS.

Dr. A. H. Plumb, whose unselfish philanthropic life work was noticed in the last number of the JOURNAL was a rare man, the soul of conscientiousness,—a follower of Him who "went about doing good."

I can never forget an address he made in 1855 to the Sunday School of the Central Congregational Church, Providence, R. I. We were then both members of Brown University, and of the Alpha Delta Phi fraternity. I had great respect for him and both then and always I loved him dearly.

His subject was "Prayer" and I remember that he closed a very earnest impassioned appeal with this quotation:

"Is prayer a key? Upon thy breast
Secure it with a golden chain.
Is prayer a bolt? Let frequent use
That bolt from gathering rust retain.
Then use the key at morning height
And ever draw the bolt at night."

Years afterwards at a dinner given by Mrs. Hunt after a meeting of her Advisory Committee, Dr. Plumb, Dr. Dorchester, Joseph Cook and others being present, I referred to that address and quoted the lines given above. Dr. Plumb had utterly forgotten the incident and thought I must be mistaken, suggesting that someone else had made the quotation. My memory was clear and definite, however, and I distinctly recalled where he stood, how earnest he was, and what a strong impression his remarks made upon the whole school.

Milne's Progressive Arithmetics

TWO BOOK SERIES
THREE BOOK SERIES

These new arithmetics have been prepared by Dr. Milne to meet the demand which has sprung up in some quarters for a treatment of the subject upon somewhat new lines. This treatment, does not, however, depart from the old and tried foundations which have gained for his previous series the widest use throughout the country.

In planning the Progressive Arithmetics, the author has preserved these older features, and infused them with new life by combination with what is best in modern methods of instruction.

Built upon a definite pedagogical plan, these books teach the processes of arithmetic in such a way as to develop the reasoning faculties, and to train the power of rapid, accurate and skillful manipulation of numbers. Each new topic is first carefully developed, and then enforced by sufficient practice to fix it thoroughly in the mind when first presented. The problems relate to a wide range of subjects drawn from modern life and industries, and the numerous illustrations always serve a practical purpose.

American Book Company

New York Cincinnati Chicago Boston

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

Child's Book of Health. Revised Edition.

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

How to Keep Well. Revised Edition.

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition.

The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health.

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology.

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work.

GINN & COMPANY, Publishers

Boston New York Chicago London
San Francisco Atlanta Dallas Columbus

TEACHER'S GROUPS.

Normal Instructor,	\$.75	} OUR PRICE	\$1.00
School Physiology Journal, . .	.60		

Normal Instructor,	\$.75	} OUR PRICE	\$1.65
Primary Plans,	1.00		
School Physiology Journal, . .	.60		

CLASS A.

Success,	\$1.00	} Any 1 with JOURNAL	\$1.15
Woman's Home Companion, . .	1.00		
American (Leslie's),	1.00	} Any 2 with JOURNAL	\$1.80
Our Little Folks, (new)	1.00		
American Motherhood,	1.00	} Any 3 with JOURNAL	\$2.50
Primary Plans,	1.00		
American Boy,	1.00		
Altruist, *	1.00		

*Less \$.15 if this is chosen.

Anti-Cigarette Helps. Timely booklets on a timely topic. Teachers! Parents! Do you know what can be said against the tobacco habit? These pamphlets will tell you.

Power of the Tobacco Habit, \$.20. The Cigaretist, \$.05. Boy and the Cigaret, \$.05. Cigaret and Tobacco, \$.05.
Why the Cigaret is Especially Harmful, \$.20. The Cigaret and the Schoolboy, \$.01.
Samples of each, \$.50. International Course of Study, \$.05. Samples of Anti-Alcohol Leaflets, \$.10.

New Scientific Temperance Leaflets

Social Service in the Temperance Reformation

By Cora F. Stoddard, A. B.

PRICE PER 100

\$2.00

Important Place of Physiology in the School Curriculum

By Prof. F. M. Gregg, A. M.

1.00

The Problem of Americanizing One Million Immigrants Yearly

By J. C. Jackson, D. D., Ph. D.

.75

Scientific Temperance in the First Six School Grades

By Mrs. Annie W. Clark

.30

Alcohol as it Affects the Brain and Nerve Tissue

By Vaclav H. Podstata, M. D.

.75

Relation of the Drink Problem to the Perpetuity of the Nation

By T. A. MacNicholl, M. D.

1.00

They Want Your Money (Popular Beer Leaflet)

By E. L. Transeau

.45

FRESH, ATTRACTIVE

Samples of Each, only \$.10

POWERFULLY CONVINCING

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

A GRAND PREMIUM OFFER

FOR SIXTY DAYS ONLY



WE have been successful in closing a special contract with THE CONSOLIDATED FOUNTAIN PEN CO., of Brooklyn, N. Y., whereby we can supply a guaranteed **SOLID GOLD FOUNTAIN PEN,**

The "Celtric Model 1,"

To every subscriber, **old or new, who sends us fifty cents for a year's subscription and fifty cents additional.**

The "Celtric Model 1" compares favorably with any \$2.00 pen on the market today. The pen will be forwarded immediately upon receipt of the money.

A DESCRIPTION OF THE PEN

The stock is made of the best quality of hard rubber, beautifully chased, and fitted in four parts; the pen is 14-k gold, fitted with iridium points, and the feed is guaranteed by the manufacturers to flow evenly without leaking or blotting. Pen can be furnished with stub, medium, or fine pen point as desired.

"A FOUNTAIN PEN IS A NECESSITY OF THE TWENTIETH CENTURY"

The Egyptians used a split reed; our grandfathers, a goosequill; our fathers, a steel or ordinary gold pen. But today we want

A Fountain Pen

that dispenses with the inconvenient inkstand, that does not corrode, and that is always ready for use. Bears the manufacturer's guarantee that the pen is solid GOLD 14-k fine. If it does not prove satisfactory in every way we will exchange it for another, or return the fifty cents additional, if the pen is returned within 30 days.

This is an unusual opportunity to secure, at a very low price, an article of superior quality that is coming to be essential to the comfort and convenience of every one who writes

For Sixty Days Only, Journal and Pen, \$1.00

SCHOOL PHYSIOLOGY JOURNAL

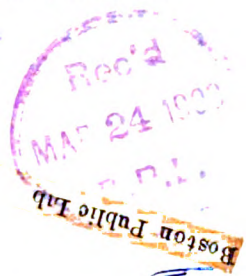
23 TRULL STREET

BOSTON, MASS.

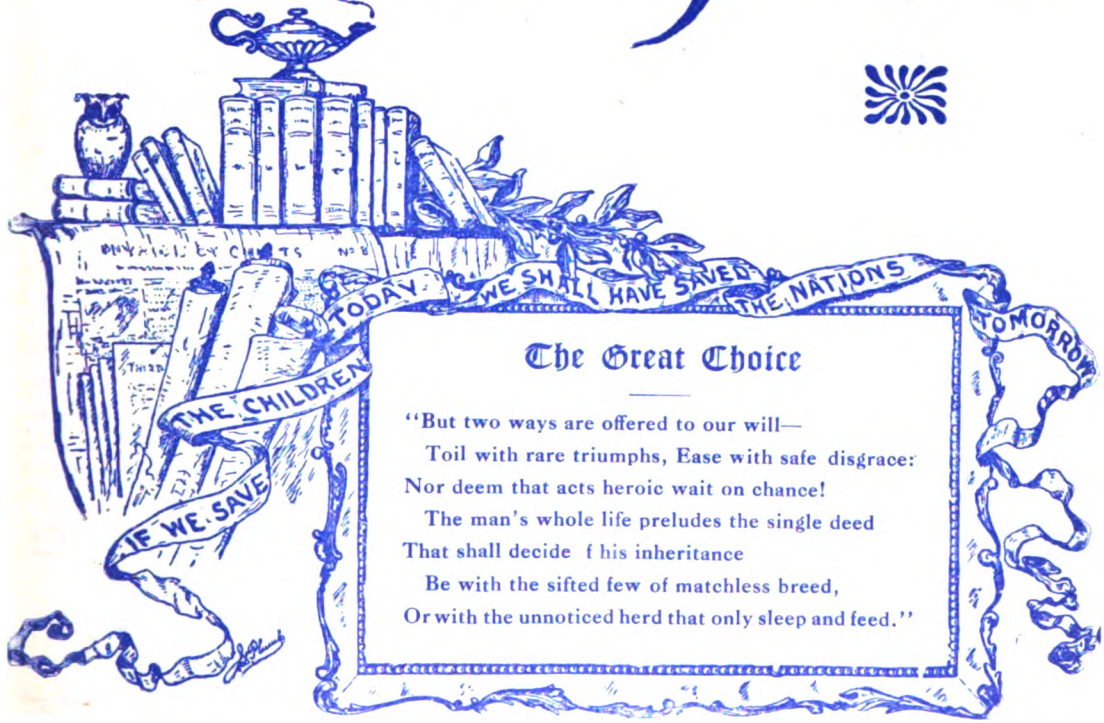
592

"To cure is the voice of the past; to prevent, the divine whisper of today."

Kate Douglass Wiggin.



THE SCHOOL PHYSIOLOGY JOURNAL



The Great Choice

"But two ways are offered to our will—
Toil with rare triumphs, Ease with safe disgrace:
Nor deem that acts heroic wait on chance!
The man's whole life preludes the single deed
That shall decide of his inheritance
Be with the sifted few of matchless breed,
Or with the unnoticed herd that only sleep and feed."

PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVII. NO. 7
MARCH, 1908

Digitized by Google

Harmonic Music Series

SIX BOOKS

The most musical and scientific, as well as the simplest course of school music extant.

TO THE SUPERVISOR it affords an abundance of the very best music, systematically arranged for schoolroom use.

TO THE GRADE TEACHER it affords every assistance for the proper presentation of every lesson, thus securing direct results and saving time.

TO THE PUPIL it affords the cream of song literature, from the simplest melody to the oratorio chorus, and gives a consistent training in every essential factor of a music education.

Write **TODAY** for full information

American Book Company

New York

Cincinnati

Chicago

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy.

\$4.00 per Dozen.

\$25.00 per 100.

Address

HENRY R. PATTENGILL

Lansing, Michigan.

NEW SCIENTIFIC TEMPERANCE LEAFLETS

PRICE PER 100

Social Service in the Temperance Reformation

By Cora F. Stoddard, A. B. \$2.00

Important Place of Physiology in the School Curriculum

By Prof. F. M. Gregg, A. M. 1.00

The Problem of Americanizing One Million Immigrants Yearly

By J. C. Jackson, D. D., Ph. D.75

Scientific Temperance in the First Six School Grades

By Mrs. Annie W. Clark30

Alcohol as it Affects the Brain and Nerve Tissue

By Vaclav H. Podstata, M. D.75

Relation of the Drink Problem to the Perpetuity of the Nation

By T. A. MacNicholl, M. D. 1.00

They Want Your Money (Popular Beer Leaflet)

By E. L. Transeau.45

Fresh, Attractive Powerfully Convincing
Samples of Each, only \$1.10

CONTENTS

	PAGE
The Teacher, the Doctor and the Alcohol Problem	97
A Practical Experience in Cigaret Smoking	98
Judging from Results	100
Primary Lesson—Second Year—Hearing	102
Grammar Lesson—Fourth Year—Body Framework	103
Editorials	104
Life Waste	105
Preventive Pointers	106
High School—Nutrition	107
Experiments for Detecting Food Adulteration	110
Comparison of Food Values	112
Book Table	112

THE SUFFOLK

ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers.

33 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS

TEACHER'S GROUPS.

Normal Instructor,	\$.75	OUR PRICE	\$1.00
School Physiology Journal,60		

Normal Instructor,	\$.75	OUR PRICE	\$1.65
Primary Plans,	1.00		
School Physiology Journal, . . . . .	.60	

CLASS A.

Success,	\$1.00	Any 1 with JOURNAL	\$1.15
Woman's Home Companion,	1.00		
American (Leslie's),	1.00	Any 2 with JOURNAL	\$1.80
Our Little Folks, (new)	1.00		
American Motherhood,	1.00	Any 3 with JOURNAL	\$2.50
Primary Plans,	1.00		
American Boy,	1.00		
Altruist, *	1.00		

*Less \$.15 if this is chosen.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVII

BOSTON, MARCH, 1908

No. 7

The Child

By James Oppenheim



YOU may be Christ or Shakespeare, little child,
A savior or a sun to the lost world.
There is no babe born but may carry furl'd
Strength to make bloom the world's disastrous wild.
O, what then must our labors be to mould you,
To open the heart, to build with dream the brain,
To strengthen the young soul to toil and pain,
Till our age-aching hands no longer hold you!

Vision far-dreamed! But soft! If your last goal
Be low, if you are only common clay,
What then? Toil lost? Were our toil trebled, nay!
You are a soul, you are a human soul,
A greater than the skies ten-trillion starred—
Shakespeare no greater, O you slip of God!

—*Cosmopolitan.*



THE TEACHER, THE DOCTOR, AND THE ALCOHOL PROBLEM

BY T. N. KELYNACK, M. D.

Hon. Secretary of the British Society for the Study of Inebriety. Editor of The British Journal of Inebriety

THE Bishop of Birmingham, some time ago at a conference in London, caused some surprise by saying: "People tell us that a man's first duty is to obey his conscience. It is not so. That is only a man's second duty; his first duty is to instruct his conscience." In making such a statement, Dr. Gore manifested true insight and real scientific precision. "Verify your references," is advice which everyone would do well to comply with, but I know of only two professions that habitually and of set purpose revise their precepts—the teaching, and the medical professions. It takes much grace for an ordinary man or woman to admit that he or she is an imperfect being. But teachers and doctors have ever the witness of dead and departed editions of their works, literary and otherwise, to testify that their knowledge is in need of growth and revision.

Teachers and practitioners of medicine have for long loyally co-operated, and with the entry of the doctor into the schools, they look forward to association as allies. Together they seek to lead the child into his kingdom, to aid each little life to win the best, to shield and shelter all committed to their care from

the manifold hampering, hindering, deranging and destroying influences of evil in every form.

Facing work in this spirit, it comes to pass that both teachers and doctors have to study the problems which circle round the alcohol problem. To these two professions the nation rightly looks for direction and guidance.

At the present time there is no room for dogmatic or dictatorial assertions, for no mere anti or pro-alcohol manifestoes will settle the matter. We have to go down to the bed rock of truth, for the alcohol problem is essentially a scientific one, and must be viewed, studied, and expounded in the strictly impartial and absolutely truth-loving spirit of the reverent scientist.

There are certain facts which we as teachers and doctors have to recognize at the outset. We must realize that of the 1,200,000 children born every year into this, our Christian England, fully one-fourth to one-third are born into conditions of want and squalor, states of life which above all others are made by and make alcoholism.

As evidence also of the neglect, apathy and ignorance, and of the imperfect conditions of

home life, we should remember that during the last five years nearly 1,000,000 have died under their fifth birthday; and that if the mortality rate of infants during the first week of life were to continue at this figure for 42 weeks, every infant would have perished.

The Inter-departmental Report on Physical Deterioration has taught us that we need not lament so much for the dead as that we should grieve for the living,—for the crippled in mind and body, the deformed and degenerate, the mentally defectives, and the innately predisposed to diseases and crime and sin. These are the burdens which are crushing us as a people.

Scientific researches have given us clear explanations of how and why alcohol acts as a most potent and deadly agent in the production of physical deterioration. Alcohol is a drug which, while lowering the vitality of all cells, has a special deleterious influence on the highest and most essential elements of man's being.

The work of scientific students in all parts of the world goes to show that in alcohol we have truly an enemy of the race—an anti-social agent. In applying scientific knowledge to daily life what do we find? In England and Wales alone—to take but one example—it is estimated that there are at the present time 8,000 mentally defective children

in special schools, and this gives no adequate idea of the prevalence of the calamity which is threatening us on every side. Those are the darkened souls that we throw out from among us to swell the ranks of the prostitutes, unemployables, and criminals, all human derelicts; and it is terrible to consider that many of these perpetuate and aggravate and multiply the national peril. The more we look into this question, the more we realize that large sections of the people are now and in the near future will be most liable to fall victims to the influence of alcohol, because such a large number of them are mentally and physically unstable and in a condition where they have a proclivity to be peculiarly susceptible to the toxic action of alcohol.

All will agree that it is better to provide the educational fence at the top of the precipice than to be content with a medical ambulance at the bottom. The subject is one which is endless in its far-reaching ramifications. There is, however, only one sure and certain remedy for this deplorable blight which darkens our land; and it is a form of treatment which the doctor can prescribe and the teacher administer and approve. The prescription is this: Educate! By precept and practice, Educate!—From a lecture delivered before a distinguished body of English physicians. Revised for JOURNAL by the author.

A PRACTICAL EXPERIENCE IN CIGARET SMOKING

BY T. D. CROTHERS, M. D., HARTFORD, CONN.

IN the course of long years of struggle and persistent efforts, John Brown graduated from a leading school of technology and was recommended for a very responsible position with a large manufacturing company. By appointment he called on the president of the company, and after a very pleasant interview, was engaged for the position.

On leaving the office, he lit a cigaret and walked down the street to the hotel where he was staying. Within an hour he was surprised to receive a note from the president asking him to call and see him at once. He returned, and after a few moments' conversation was informed by the president that it would be impossible to take him into their service.

He was surprised, and suggested that he would like to know the reasons for this sudden change. The president frankly said that the work they required of him depended entirely upon the accuracy of his senses; that he had observed that Mr. Brown was a cigaret smoker, and they could not think of employing a person who used cigarets.

John went away depressed, thinking that the president was probably some theoretical fanatic, and that it was impossible that the use of so small a thing as a cigaret could impair his usefulness.

Later he was asked to substitute in the engineering department of a railroad company. On leaving his work and lighting a cigaret, he observed the chief of the department watching him narrowly. At the end of a week he received a notice that his services were not longer required. As the man for whom he substituted was still ill, he was surprised, and asked the chief of the division if there was no work for him. The answer, given in a gruff tone, was to the effect that no cigaret smokers were wanted in that position.

John was overwhelmed with astonishment. In his own mind he had reasoned out that smoking a pipe was coarse and low, and cigar smoking, particularly in public, savored of fast life, but that a mild cigaret was not only respectable, but genteel. Surely, no one could object to a few puffs from a little white roll of tobacco, especially when not used during

business hours. Moreover, he reasoned that at night in his own room he had a perfect right to smoke and could not possibly offend anyone by so doing.

A few days afterwards, the landlady of the boarding house where he was staying, suggested that she would like to have his room. This was equally astonishing to him, and he begged her to give a reason. She said, "You are a cigaret smoker, and I am afraid that you will set fire to my house. No matter how careful you may be, I can not trust anyone to smoke cigarets here."

This was another reason that astonished John, particularly as he had been very careful; he could not understand why anyone should fear danger from this source if ordinary care was observed.

After a few weeks, he secured another situation, and this time he was more careful about smoking in public; but he still used cigarets when unobserved. A few months later, two men from the same office doing similar work were selected to go into a distant part of the country to do some very important work which was quite remunerative, and gave them an excellent opportunity for promotion. Why they should be selected and he left out, was a mystery, for he was conscious that his ability was equal, even superior to theirs.

Accordingly, he went to the manager and asked him frankly if his work was faulty, and if not, why he had not been given the position. The answer was, "You are a cigaret smoker. Your fingers show the evidence of it. We never promote a man who uses tobacco in this form."

John was startled at this, but still more so, when in the course of a few weeks he received a notice that his services were no more required. Thus within two years he had lost three situations and had been turned out of a boarding house, and the reason given in each instance was, cigaret smoking. If the habit was so bad, why had he not been taught this before? Why had the professor in the college (who had smoked with him frequently) and why had not his fellow students, as well as himself, been told the possible dangers from this source? They had been advised about many other things and had heard sermons and lectures on ethics and morals. They had heard about the danger of spirit-drinking and of frequenting bars, but nothing on tobacco or cigaret smoking, except that incidentally they had been told that smoking pipes in public places was not genteel.

Finally, in despair, John called on a physician with whom he had been acquainted all his life, and after relating his experience, asked his advice.

The physician said that it was now generally understood, particularly in business circles, that the cigaret smoker was the most degenerate of tobacco users. First, his memory was impaired and his senses were less acute; then he could not think or reason so quickly; he made mistakes and did not realize them himself; he had less vigor, was more easily exhausted, and in emergencies could not be depended upon. Continuing, the doctor explained that the reason for this is clear from the fact that the combustion of cigarets is carried on so close to the mouth that all their poisonous products are taken directly into the system, and these accumulate rapidly on account of the frequency with which the



"Well hast thou fought
Who single hast maintain'd the cause of truth . . .
For this was all thy care to stand approved in sight of God,
Though worlds judged thee perverse."

cigarets are used. After a time they affect the higher sensory centers and tends to destroy the character of the person. These effects are particularly noted in younger persons. The cigaret smoker is most unfit for the performance of work that requires accuracy and rapidity of thought. Experience confirms this in every circle of business. The employer pays less attention to the cigaret smoking of the workman if he is a muscle worker, or a mere mechanic, doing the same thing over and over; but when the work requires accurate adjustment of means to ends and of judgment and reason, the cigaret smoker fails.

This was a revelation to John, and he resolved to abandon cigarets at once. The doctor urged him to show his manhood by overcoming this obstacle which threatened his whole future. He advised him to begin a course of gymnastics and baths every morning to increase the vigor and strength of his body; and told him how to overcome his nervousness if it became very great.

The struggle was short, because John was a determined man, and in a week or so an intense, disgust for cigaret smoking began which he cultivated in every possible way. On several occasions, when severely tempted, he sought the advice of the physician, and was able to overcome the impulse.

John is now a partner in business and an employer of labor, and this story is his early experience. He says, "I ask every young man seeking employment with me concerning his habits and use of tobacco. If he is a cigaret smoker and apparently a valuable man, I take him on probation with a distinct understanding that he must abandon their use if he continues in our employ. In this way," he says, "I have been able to save many bright young men who otherwise would no doubt have been lost."

John Brown considers his first experience and discharges for cigaret smoking to have been among the greatest blessings of his life.

JUDGING FROM RESULTS

BY E. L. TRANSEAU

IN an article in the *Cumberland Presbyterian* last November, speaking of the various scientific investigations and discussions of the food value of alcoholic drinks, a writer said: "Meanwhile the public and some business men will settle the question largely by results."

This statement is quite in harmony with a conclusion which the *Chicago Medical Journal*, February, 20, 1904, draws from a report of an English life insurance company. Quoting the *British Medical Journal*, where the report first appeared, the former said:

"The special feature of the case is that the abstainers show an advantage which is from 25 to 45 per cent. superior to that of the non-abstainer between the years of 25 and 65, that is, in the active and valuable years of life."

After showing that the comparisons were strictly accurate, and all others conditions except drink the same in both classes, the *Chicago Medical Journal* concluded:

"Such facts are far more significant and important in establishing what is the dietetic value of alcohol, as commonly used, than any amount of laboratory experimentation. They agree, moreover, with other experience from a medical and economical point of view. Therefore, total abstinence from alcohol seems to be decidedly the best policy for any one who wishes to live long and to avoid any unnecessary risk to health and life."

If this practical way of deciding the question could have been agreed upon earlier in the discussion, much misapprehension might have been prevented. But, because the deceptive effects of alcohol warp the judgment,

the laboratory experiments were really needed to furnish indisputable evidence.

Because of its deceptive effects upon sensation, men thought that alcohol warmed them, until exact observations with the thermometer showed that it really cooled them.

Because it dulls the feelings of fatigue, men thought they could work better after taking alcohol; but exact measurements with and without alcohol showed the work done under its influence to be less in quantity and poorer in quality.

Because the heart often beats faster after alcohol is taken, men thought it must be a heart tonic; but the exact methods of the laboratory have shown that the contracting power of the heart, as well as of other muscles, is weakened by alcohol.

One observer, not long ago, thought he had proved that the muscles of a frog's leg contracted more forcibly after immersion in a weak alcoholic solution. He was said to have concluded that the muscles absorbed the alcohol and used it for food. This "discovery" was heralded far and wide by the newspapers. A year or so afterwards, other investigators repeated the experiment, taking the precaution to test the effects of other substances upon the power of the frog's muscles. Besides the alcoholic solution, they tried a normal salt solution and also plain water, and they found that the muscle contracted with considerably more power when immersed in plain water, and with far more power when immersed in the normal salt solution, than when in the alcoholic solution. This was a very important contribution to the question. It should be observed, however,

that the newspapers did not take notice.

Dr. Henhede, a physician in the Skanderborg Hospital, Denmark, said in an article reported from Sweden not long ago by Ernest B. Gordon, son of the late Dr. A. J. Gordon, of Boston, that in giving anesthetics surgeons find that patients who are accustomed to the use of alcohol are apt to be highly excited at first by ether or chloroform and often furnish amusement as well as trouble to the doctors and nurses before they are completely narcotised; while other persons pass quickly into insensibility.

Because alcohol usually produces a similar preliminary stage of excitement in those who are accustomed to it, it has been supposed to be a stimulant to mental work. But the precise tests applied in the German psychological laboratories have shown that alcohol lowers mental working ability and that the more difficult the work, the more seriously it is hindered. Poets and artists testify that instead of assisting genius, alcohol tends to make its work *bizarre*, to bring forth abnormal conceptions and to weaken critical judgment.

The damaging effect of alcohol upon the executive ability of the worker in the ordinary lines of industry is attested by the increasing number of employers who give preference to total abstainers or forbid drinking during working hours.

Thus we might take up, one after another, the various purposes for which food is used and find that in all of them,—in bodily warmth, in internal and external working ability, in growth, repair, and in resistance against disease, alcohol produces effects directly opposite to those which we expect and obtain from food.

Imagine the absurdity of an employer forbidding his workmen to take food, on the supposition that it would make them less able to work; or a physician charging his patients not to eat during an epidemic lest food render them more susceptible to the disease and lessen their power of withstanding it. Yet alcohol is restricted in just these cases, where it would be absurd to forbid food.

There are physicians, it is true, who still prescribe alcoholics to "strengthen" their patients; but they do it upon theory, not because they have large numbers of strictly comparable results to show that alcohol does actually strengthen.

The views and discussions on this point appearing often in the medical journals warrant the prophecy that the time will soon come when the doctors who prescribe beer, wine, and ale to "build up" their run down patients, will soon exist only in the advertisements of

those who deal in the liquors mentioned.

Another aid which laboratory work has given to the solution of this question is in determining the effects of small quantities. The plea of the liquor advocates has long been, "It won't hurt you if you don't take too much." "Too much" he has guessed to be anywhere from one and one-half to three ounces of alcohol a day. The delicate experiments of Dr. Hunt and Prof. Laitinen have shown that far smaller amounts cause serious disorders in the body's internal processes, although looks, speech, and action may appear unchanged to the ordinary observer.

When we put all these findings together and note their mutual relations, we see that both the practical and the experimental were needed to offset the mistakes of the theorists and the tricks of the trade. There are still many who are misled by one or the other, and many who are in honest doubt. These will reach correct judgments if they will carefully note the results of plain, practical, and strictly comparable tests.

Whether we regard life as all comedy, or as a grave and serious experience, the question of increasing and diminishing our powers and possibilities is one of profound personal interest. We can not afford to be deceived into thinking that we may promote our bodily health, vigor, and power to enjoy by taking as food a substance that has been proved by practical experience and exact scientific investigation to thwart the purposes of food, to weaken the body, disorder its sensations, and shorten life from 25 to 45 per cent.

We can not afford to be deceived in this matter, whether we look upon life from the narrow standpoint of mere personal enjoyment or from the broader one that takes in the interrelations of the members of society and sees how the doings of one effect the others, and how the happiness of all is increased if each one develops to the utmost his highest possibilities.

MARCH

BY HELEN HUNT JACKSON

In thy rough days
I find no war in nature, though the wild
Winds clash and clang, and broken boughs are
piled
At feet of writhing trees. The violets raise
Their heads without afright, without amaze,
And sleep through all the din, as sleeps a child.
And he who watches well may well discover
Sweet expectation in each living thing.
Like pregnant mother the sweet earth doth yearn;
In secret joy makes ready for the spring;
And hidden, sacred, in her breast doth bear
Annunciation lilies for the year.



Primary Lessons

SECOND YEAR

THE SENSES—HEARING

NOTE—Let the pupils close their eyes, while two or three make sounds, such as walking across the floor, ringing the bell, clapping the hands, writing on the blackboard, etc. Ask the others to tell what these were doing and how they knew. Thus review the fact that hearing tells us some facts as quickly or more so than sight.

THE OUTER EAR

WITH what part of your body did you learn what was being done? If you did not wish to see something what could you do? If you did not wish to hear some disagreeable sound? You may close your ears gently with your fingers and see if you can hear me strike the bell. How many heard? Not many, although no one covered more than the tiny passage into the head. You see that we do not hear with this outer part we call the ear, but with what people call the inner ear. Exhibit a chart picture of the ear, or a good blackboard drawing, showing the curves and narrowness of the ear passages. Lead the children to see how narrow these passages are. Why does a person who can not hear very well put his hand behind his ear? Why do you do the same when a playmate calls from a distance? See that the children understand that the outer ear collects the sound and makes it possible for us to hear better than we could if there were only the little passage into the inner ear.

If a pearly shell, which somewhat resembles the ear, can be obtained, show it and compare a child's clean, nicely-shaped pink ear to the shell. If we are careful of our ears and do not pull our caps down hard over them or—mention also some other things the children do which distort the ears—they will be pretty and well-shaped as a shell. Would the shell be pretty if it were not clean? Show the children how to clean the outer ear by gently wiping its curved surface with a damp cloth.

THE INNER EAR

If we heard with the outer ear, what would

often happen when we got a blow or some hurt on the ear? Can you think of the reason why the hearing part of the ear is inside the head.

Referring again to the picture of the inner ear, ask the children to observe and describe it and interest them in the beauty of these tiny, winding passages. Country children will notice that one part is like a snail shell. Tell them that all these different parts are to help us to hear well. Speak of the wax lining and the hairs, and explain their use simply. Tell them these parts are so tiny and delicate that they are easily injured if anything gets in the ear or if we scrape the little passage with a pin, pencil or other hard thing.

Tell the true story of the hunter whose ears were so keen he could hear even the little sounds the birds or squirrels made in the woods, but one day his gun went off close to his ear and he could never again hear in that ear. Ask why children should not shout loudly in the ears of others. Explain that blows on the ears may also make one deaf.

We can train our ears so that we can hear very faint sounds, if we take care of our hearing.

WHAT WE HEAR

What sounds do you like to hear? We must remember that other people like to hear pleasant sounds best, too. Whether indoors or out of doors, we should be considerate in the noises we make, lest we disturb others.

We can train our ears to enjoy beautiful sounds. The more good music you hear the more you will enjoy it. People who have trained their ears to distinguish the fine expressions of music, enjoy it much more than people who have no such training. Blind people train their sense of hearing. They often hear better than we do.

People in the country can hear beautiful music every summer. In the woods and fields and the orchards, are many sweet singers who charge nothing for their songs. Who can tell some of their names? Who can imitate the song of some bird? How many different birds can you name by their songs? We feel sorry for people who are deaf and can not hear the birds sing; how do we feel for people who can hear, but do not listen or enjoy?

Sometimes boys and girls do not hear what is said to them, and yet they are not deaf. What is the trouble with them? What do we mean when we say a person lets what he hears go in one ear and out of the other? What must we do beside listen if we would train our hearing? (Give attention, think about what we hear). We should not listen to unkind remarks about other people.

Grammar
Lesson

FOURTH YEAR

THE BODY FRAMEWORK

Material for class presentation should include a burnt soup bone, a sheep's rib, which has been soaked in dilute muriatic acid, piece of old dry bone showing openings for blood vessels, and fresh bones, neatly trimmed, as follows: A sheep's leg bone, carefully sawed transversely through its entire length, and a joint and tendons from the leg of a chicken. The bones of the latter should be cut an inch or so back of the joint. If fresh, the jelly-like lubricant should appear on the cartilage.

USES OF THE BONES

HOW many have seen a house go up? (Previous to the lesson note whether any building is being built near by, and if so, ask the children to observe the different parts closely. Question about this or another.)

Framework—What important part was put up first? Question the children as to the need of a framework, how the timbers used differed in size, shape and use, and why; how they were fastened together; why sound timbers were necessary and the probable effects if even one of the main supporting timbers should be unsound.

Show pictures of skeletons of several typical animals, such as the bear, cat, frog, hen, seal, fish, and ask the children to compare these with the framework of the house. Of what are these made? What do we call such sets of bones?

Protection—Children place their hands on their heads. Draw from them that the head is an oval box (why oval?) made of bone (give name, *skull*, if class have not had it), and that it surrounds and protects the brain and the organs of four senses.

Allow the children to stand, and placing the hands on the sides, discover the ribs and the fact that they are movable (for what purpose?). They should also find the separate bones of the spine, the collar bones and the shoulder blades. Draw from the class that these bones form the framework of the trunk and enclose and protect the heart, lungs, and stomach.

Movement—Seat the class, and secure

definite statements of the first two uses of the bones. Send a child to the blackboard to write these statements. Tell the class there is still another important use of the bones, one which this child has just illustrated. What is it? If they do not readily see that bones are necessary to motion, ask for some other action and question further. Ask the boy to write the third use of the bones. What do we call the parts of the body with which most of our movements are made?

STRUCTURE OF THE BONES AND JOINTS

Bones—Place the two sections of the fresh bone together so that the class may see its entire appearance and then separate them to show the inner structure. Let the class discover that the general structure of a bone is a hollow tube closed and enlarged at the ends and filled with oily marrow, and that the solid part of the bone is like rosy ivory covered with a tough pinkish skin (why are these pinkish and what does that show?). How can the blood pass through? Show old bone with openings for blood vessels. Show also the burnt bone and one treated with acid. Lead the class to see that the hardness of the old bone shows its mineral nature, and the burnt bone that that mineral is lime. What material does the soft bone show? When are the bones most like the hard bone? like the soft one?

Joints—Develop the kinds, uses and names of the joints by directing the children to bend the hinge joints in the elbows and fingers, to revolve the ball and socket joint of the arms at the shoulders, and to show the gliding joints in the lower arm and in the neck by proper movements. Again call attention to the enlarged ends of the large fresh bone and illustrate the binding ligaments and the packing and synovial fluid by the chicken joint.

THE CARE OF THE FRAMEWORK

Look for some tree with crooked trunk and plan to have the children observe its deformity before the lesson occurs. Compare it with beautiful, straight trees. Ask the class to suggest how it might be straightened, and draw from them that, although it might easily have been kept straight when it was growing, a pair of horses could not pull it into shape now.

Call some boy before the class and have him take several postures, such as standing on one foot and the like and lead the children to see that if he were to keep these positions habitually, the body, like the tree, would gradually grow crooked and become fixed.

(Concluded on page 112a)

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.\$0.50 each
Clubs of 50 and over.40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"Life is too short to waste,
Up! mind thine own aim, and
God speed the mark!"

LIFE OR EXISTENCE

THE waste of human life is one of the appalling facts of history. War, pestilence, famine, and disease, through carelessness, indifference, or ignorance, have been great destroyers, snapping the springs of human existence. The passing of war, despite the huge navies and armies of the world, seems a possible event in a not too distant future. Agricultural science is teaching us how to prevent scarcity of food supply; sociology is searching out the causes of famine, arising from unequal economic adjustments. Medical science has already practically discovered means of prevention of the great pestilences; it knows how to conquer many diseases, and yet—there remains the health problem so strikingly stated on another page by Dr. Corwin and the Committee of One Hundred of the American Health League.

To many a man or woman the passing of years brings not really life at all, but merely existence, and sometimes a very abbreviated one at that. The power of accomplishment and of enjoyment is hampered by physical defects or habits. Probably only a very small percentage of persons really knows the freedom, that sense of achieving mastery, of a readiness to meet well life's demands, which should be characteristic and universal.

THERE is only one thing of permanent value that can be done. The old adage, "An ounce of prevention is worth a pound of cure," expresses the situation exactly. The facts as to the consequences of disobeying the laws of health, as to means of preventing the contraction or spread of disease, as to the relation of the use of alcohol (long thought harm-

less) and other narcotic drugs to disease, a sense of personal responsibility for one's relations to society and to the race, and a pride in healthful living, must be drilled into public consciousness until it becomes a conscience that will act intelligently and thoroughly.

In this great struggle that is upon us, the school must be a leader. Its influence reaches far beyond its four walls and the thirty or forty children gathered therein. Back of the child is the home of today. Before him is the home of tomorrow. Three generations thus lie open to the teacher's guidance. Education has passed far beyond the period when the Three R's were its center and circumference. Today, it means that the pupil shall learn "to live cleanly, happily, and helpfully, with those around him."

To remove these causes in so far as they are due to ignorance or indifference, constitutes one of the school's chief obligations to the community. If there must be a choice in emphasis upon subjects from the standpoint of social requirement, it is more important that the child shall be taught what he and his family must and must not do to avoid tuberculosis, to obey cheerfully because intelligently the regulations for checking the spread of contagious diseases, to select wisely, healthful foods and drinks, than that he should be taught the political divisions of Asia. "Sociology and pedagogy must be harmoniously blended would we truly serve the nation."

THE vast amount of work already done by the teachers of America in implanting the principles of healthful and sober living, can never be accurately estimated; but unless one reads amiss the signs of the times, a greater future of service in this direction lies immediately ahead. Teachers have done this work under immense difficulties, and sometimes it is to be feared, not very enthusiastically. Lack of training, lack of institute or classroom helps, lack of time and encouragement have all been a part of the history of this phase of elementary education upon this point, and have been genuine obstacles with which teachers had to contend.

A change is coming. Never was there such widespread discussion of all questions pertaining to health and sobriety. The work of the school, inadequate as it has often been, has unquestionably been a great causative factor in the present interest. The popular demand for this information will increase. The public elementary school has a splendid opportunity for constructive leadership. How much greater for it to lead than to wait until compelled to action by the irresistible force of public insistence.

LIFE WASTE APPALLING

IMPERATIVE NECESSITY OF NATIONAL ORGANIZATION OF HEALTH

FOR a nation to permit great wastes to go unchecked is more than a suicidal policy; for an evil more destructive than race suicide is *race homicide*.

There are four great wastes today, the more lamentable, because they are unnecessary. They are *preventable death, preventable sickness, preventable conditions of low physical and mental efficiency and preventable ignorance*. The magnitude of these wastes is testified to by experts competent to judge. They fall like shades of night over the whole human race, blotting out its fairest years of happiness.

The facts are cold and bare—1,500,000 persons must die in the United States during the next twelve months; an equivalent of 4,200,000 persons will be constantly sick; over 5,000,000 homes, consisting of 25,000,000 persons, will be made more or less wretched by mortality and morbidity.

in exterminating parasitic growths that prey on fruit trees. In fact, the Department of Agriculture has expended during the last ten years over \$46,000,000. But not a wheel of the official machinery at Washington was ever set in motion for the alleviation or cure of diseases of the heart or kidneys, which will carry off over 6,000,000 of our population. Eight millions will perish with pneumonia, and the entire event is accepted by the American people with a resignation equal to that of the Hindu, who, in the midst of indescribable filth, calmly awaits the day of the cholera.

INFANT MORTALITY PREVENTABLE

During the next census period more than 6,000,000 infants under two years of age will end their little spans of life while mothers sit by and watch in utter helplessness. And yet this number could be probably decreased by as much as one-half. But nothing is done.

The states' rights doctrine can be applied against the Department of Agriculture as effectively as against a national department of



Shall thousands such as these be lost each year from preventable diseases?

We look with horror on the black plague of the middle ages. The black waste was but a passing cloud compared with the white waste visitation. Of the people living today, over 8,000,000 will die of tuberculosis, and the federal government does not raise a hand to help them.

ARE YE NOT OF MORE VALUE THAN THESE?

The Department of Agriculture spends seven million dollars on plant health every year, but little or nothing for promoting the physical well-being of babies. Thousands have been expended in stamping out cholera among swine, but not one dollar was ever voted for eradicating pneumonia among human beings. Hundreds of thousands are consumed in saving the lives of elm trees from the attacks of beetles; in warning farmers against blights affecting potato plants; in importing Sicilian bugs to fertilize fig blossoms in California; in ostracizing various species of weeds from the ranks of useful plants, and

health. It is not then, a question of constitutionality, but of whether or not such a department is needed by the nation.

The logic that justifies an annual appropriation of \$2,000,000 for a life-saving service against the accidents of the sea should justify protection against accidents of disease and death.

Agitation for the factory acts, the eight-hour day, regulations concerning female and child labor and immigration, is justified primarily as health regulation.

In addition to the economic gain, the establishment of a National Organization of Health would gradually but surely diminish much of the misery and suffering that can not be measured by statistics. Sickness is a radiating center of anxiety; and often death in the prime of life closes the gates of happiness on more than one life. Let us not forget that the "bitter cry of the children" still goes up to Heaven, and that civilization must hear,

until at last it heeds, the imprecations of forever wasted years of millions of lives.

If progress is to be real and lasting, it must provide whatever bulwarks it can against death, sickness, misery and ignorance; and in a great organization such as a National Or-

ganization of Health,—adequately equipped, a vast preventive machine—working ceaselessly, an attempt at least would be made to stanch those prodigal wastes of an old yet wastrel-world.—From *Circular of the Committee of One Hundred*.



PREVENTIVE POINTERS IN CHARITIES AND CORRECTIONS

R. W. CORWIN, M. A., M. D., LL.D.

General Manager Sociological Department Colorado Fuel and Iron Company.

THE work of our conference of [charities and corrections] is divided into general classes, preventive and curative.

We may liken it to a great machine, through which the vicious, the weak, and the helpless pass. Above is the hopper and below the spout. We station ourselves at the hopper and try to prevent people from falling into the machine, and we stand at the spout ready to receive and help those who are ground out.

The work at both ends of this machine is of great importance and demands serious consideration. But I wish especially to call your attention to the work of those stationed at the hopper—to those whose duty it is to prevent crime, poverty and disease. This is our most important task. Far better is it to prevent murder than to punish a murderer; better to prevent pauperism than attend the poor, better to prevent illness than to care for the sick.

The prophylaxis of charities and corrections then should receive our first attention—*prevention* should be our motto.

Medicine is no longer confined to drugs; today, the physician finds his greatest remedy in prophylaxis.

The benefits of prophylaxis, or prevention, in smallpox and diphtheria have been thoroughly established. Smallpox has ceased to be a pest, and but for neglect it would rarely occur. Anti-toxin has robbed diphtheria of its horrors, and when used early, death from this disease is almost unknown.

We read from the record at the hopper that through crime, mostly of men:

It is estimated that 80 per cent. of all deaths from pelvic diseases in women are due to venereal disease.

Twenty per cent. of all blindness in the new-born is due to the same disease.

Fifty per cent. of involuntarily childless marriages are from the same cause. . . .

The question of controlling and suppressing the manufacture and sale of alcohol is of vital importance.

Is it out of place to mention in this con-

nection the benefits of forming good habits early?

It is said that if a boy does not get drunk before he is twenty there is no danger of his ever becoming intoxicated; that if he reaches twenty-five without drinking, he is almost certain to live a temperate life.

A parent has no right to set an example of drinking to a child or a person to a neighbor.

If a father can not control himself, he can not expect his son to do better.

If an employee is to be discharged for drinking, a president or director should be dismissed for the same offence.

This is prophylaxis. Practice prophylaxis.

Alcohol is of no necessity to the sick or the well. Physicians should not become saloon keepers, or druggists' bartenders.

Alcohol may be useful in arts, but is useless in artists.

Dr. Kraepelin says: "If alcohol could be swept out of existence, the clinic would be reduced one-half; or if prompt and proper treatment of alcohol addictions could be given, two-thirds of the present evils could be eliminated, and the hospitals, asylums, prisons, poorhouses and courts would be immeasurably relieved."

We should have in every high school an instructor especially prepared to teach physiology, hygiene, and kindred sciences.

Do not put this work upon a person who tries to impart in the morning what he has read the night before. Is not the science of life, the care of the body and mind, as important as singing, old English or Greek?—From *Eighth Biennial Report Colorado Board of Charities and Correction*. and *Corrections*.



"I've been reading," said Pat, "a good dale in the papers about a bureau for the Indians. Now I don't believe in their having a bureau. I can't afford to have a bureau meself. I kape me papers in a box under the bed."

High School Physiology—Nutrition

By Grace Frances Ellis

Central High School, Grand Rapids, Michigan

STUDENTS studying physiology in the high school are sometimes prepared for the subject, but more often are not. They will, almost without exception, have had a semester of physics, but often have had no chemistry; occasionally only, they have had botany or zoology. When the course was first given, we started in on bones, according to the order in Martin; we do so no longer, because bones seem of less interest at this stage of the game.

Martin's *Human Body** has been our textbook, with several other texts for reference. With Martin, we have also used State Board of Health Reports, publications of the United States Department of Agriculture, occasional magazines and other periodicals, and even statistics collected from jails, asylums, and other institutions.

In the class room, we begin the work with some simple experiment, such as the burning of a match, and thus work out the ideas of chemical change, elements, compounds, and the like. This is usually followed by a study of air, with a preparation of oxygen and nitrogen, before the class; and after this we study the chemical composition of the human body. By this time the class is ready for some introductory laboratory work, and we begin with a set of experiments on acids and alkalies. Perhaps the simplicity of these should be emphasized; students are told to test them with Litmus paper; to taste them in dilute solutions; to neutralize the two and evaporate; and finally to give definitions drawn from these experiments, of an acid, an alkali, a neutral substance, and a salt. At the close of the period, each pupil is given some pieces of Litmus paper to take home; is asked to test as many substances as possible, and to record the results obtained under proper headings.

At the outset, it is important to emphasize the fact that physiological processes can seldom be understood unless the pupil is given some idea of the simpler principles of chemistry. He must be familiar with carbon, hydrogen, oxygen and nitrogen; he must know how to test for carbon dioxide, for acids and alkalies; he must learn something of the common processes of oxidation, neutralization, and evaporation. For unless these lessons are taught early in the course, and taught by experiment, the foundation is likely to be weak

when the more difficult processes involved in digestion, respiration, and excretion, are reached. If a pupil once gets clearly in his mind the nature of elements, compounds, and the process of oxidation, an immense amount of subsequent labor and disappointment will be saved. Class work in the text is commenced with Chaps. VIII and IX, "Why We Eat and Breathe," and "Nutrition," from Martin.

NUTRITION

In the study of foods, the student first tests for the five or six nutrients found most commonly in foods.* For the starch tests, we give each student a small bottle of iodine solution, and let him conduct his tests at home. When he has followed the simple directions given him, and has tested from ten to twenty foods, he is ready to report in the class room. He knows whether starch is most likely to be found in foods of vegetable or animal origin. Food adulteration has commonly come up for consideration in the class from the conflicting results furnished by the testing of spices. The sugar test by Fehling's solution, can be easily done at home, if pupils are furnished with test tubes, and a small supply of the solution. The presence or absence of fats, proteids, minerals, and water, may be determined at home, or in the laboratory, by the individual pupil, and results compared in the class room. Such a course leaves the pupil with a concrete idea of the important compounds he will meet with over and over again in the ingredients of his food, as components of the blood, or constituents of tissues in the body.

It is, of course, impossible to demonstrate by experiment the use of these various nutrients, and so with laboratory or home work there must be a liberal amount of class room instruction. Very often a pupil does not see, without vigorous and exhaustive questioning, what are the essential points in each experiment, and the relation of the various facts which have been accumulated.

So much accustomed are we as teachers to the combining of these various results that we forget that the end, plainly in view to us, is hidden from the pupil, and relationships are more or less vague and misty to his mind.

The uses of foods, proper methods of cooking, food economy, and the relation of diet

*School patrons should see that the indorsed edition of Martin is used.—Ed.

*Hewes' High School Physiology, Blaisdell's Practical Physiology, and several other indorsed books, include directions for performing these experiments.

to health, are, to my mind, the most important topics included under human physiology. Many high school text-books give a rather inadequate treatment of the subject; but the publications of the United States Department of Agriculture are to be obtained even in the large quantities necessary for individual study; the best bulletins for high school use are "Principles of Nutrition, and Nutritive Value of Foods," "Meats, Composition, and Cooking," and those on milk, bread-making, fish, and eggs.

The colored food charts, which are so useful in class recitations, are, unfortunately, out of print; but the same charts and tables are given in the bulletins mentioned. While the study of digestive organs is taken up in class, the laboratory work is an experimental digestion of starches and proteids, in an "artificial stomach," formed of a zinc pan, with large meshed wire gauze over it; and filled with water kept at a temperature of $98\frac{1}{2}$ degrees F. Into meshes of the gauze can be slipped the test tubes holding the food and the various digestive ferments, and at the end of three or four hours of heating, the apparatus is set away to be tested for the results of digestion on the following day.

To avoid the tendency of science teaching to take the short cut from facts to generalization, the negative results as well as the positive need consideration; and while experiments are made in digestion of proteids with pepsin and acid together, it is well to test whether either pepsin or acid alone would produce the same effect, and whether pepsin will digest other foods than proteids; or whether starch digests equally well at all temperatures.—*School Science and Mathematics.*

NOTE—The foregoing suggestive article is taken from an address read before the joint meeting of the Biological Conference and Science meeting of the Michigan School Masters' Club, Mar. 29, 1907. As it constituted only a part of a general paper, it was necessarily limited in scope. The study of the subject of nutrition may be continued on the following lines.

HYGIENE OF NUTRITION

DOMESTIC SCIENCE

Diet List—Discuss the nutritive needs of the body and build up tables on the calorie system. For what two purposes is food needed? A working man of average weight needs daily 80 to 130 grams or, from $2\frac{1}{2}$ to 4 oz. of proteid, 25 grams of salt, and from 2,500 to 3,500 calories of fats and carbohydrates. What does Voit's ration call for? What, then, would constitute a sufficient dietary? What probable results if food considerably in excess of this amount should be

taken regularly? If the ration were not balanced? Compare the dietaries of various classes of people and of different nationalities showing how, for instance, the Scot balances his ration of oatmeal with milk; the Mexican, his cornmeal bread by using beans constantly. What is the dietetic value of fibrous vegetables? Of the various kinds of fruits? Compare vegetarian diet with mixed diet. What are the relative values of the various kinds of meat and fish? Which is more nourishing, sirloin steak or some of the cheaper cuts? Make a diet list for a man which shall not cost more than \$.50 per day; how much cheaper can a man be properly nourished? How much water is needed daily?

Selection of Foods—Compare weights, quality and cost of certain kinds of groceries, such as raisins, cereals and crackers sold in bulk with those sold in sealed packages; of cheaper with better brands of canned goods. What dangers to health in the bulk groceries? What advantage in buying only certain standard brands of various kinds of food? What is the value of the maker's trademark on such goods? Why know one's grocer, baker and milk dealer and be as well-informed as possible as to the state of all parts of his establishment? (See articles on the "Clean Grocery Store," Nov. 1907 to Feb. 1908, inclusive, of the *Woman's Home Companion*.)

Cooking of Foods—Why necessary in the case (a) of green fruits? (b) of cheap cuts of beef? (c) of pork and fish? (d) of potatoes and most vegetables?

What methods of cooking are hygienic? unhygienic? What relation between unattractive, poorly-prepared food and indigestion? Correlate with cooking department, if the school has one.

Detection of Food Adulterations—As indicated by Miss Ellis, the simple experiments with foods will show some adulterations; but there are others of graver importance which would not be shown except by more careful specific tests. Thus milk is often skimmed or is adulterated by the addition of water. In cities it is all too common for it to be preserved with boric acid or formaldehyde. This is particularly unfortunate and even dangerous, because milk is often the only food taken by infants and invalids. While adulterations, such as the use of starch in spices are not dangerous, they are dishonest for the consumer pays more than he should for the article in question. Pure foods are cheapest in the end. This whole question has been considered of sufficient importance to be treated at length in a Government document entitled, "*Some Forms of Food Adulteration and Simple*

Methods for Their Detection." (Bureau of Chemistry, Bulletin No. 100. Price \$.10).

Teachers should procure a copy of this valuable 60-page manual and recommend it for home use.

Pupils should perform the experiments quoted elsewhere, and may be given such others as the teacher may select from the pamphlet itself. Practical work of this kind will interest the dullest class and can but be approved by parents.

Alcoholic Beverages Not Foods—Discussions of this topic ought to be based upon a definite statement of what a food is. The following definition by Dr. John Madden is an excellent one:

"A food is any material substance which when taken into the body will supply the needs of the body for that particular substance, without injury to the structure or functions of the body."

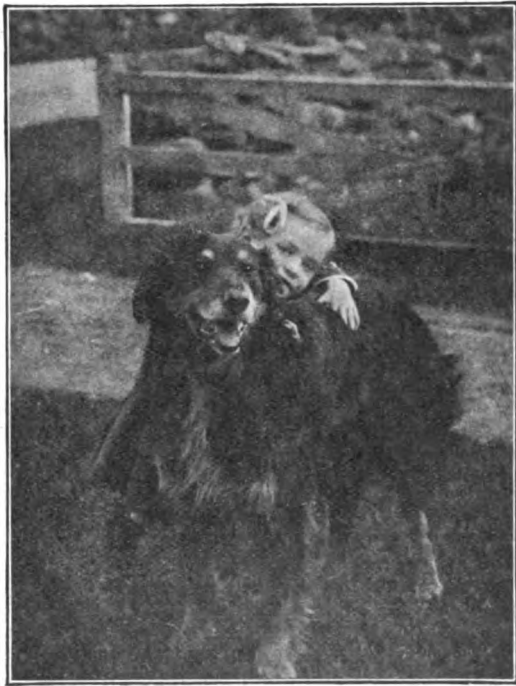
Recall the uses of food in the body and show how meats, starches, fats, and sugars meet the requirements of the definition. Each taken in a quantity to supply the body's needs for the purpose of repairing waste or for supplying heat or muscular energy, is beneficial to the organism. They replace similar materials in the body. Moreover, the body is able to save certain of them for future use when they are not immediately needed. Note also that whenever one takes a larger amount of any particular class of proper food than the body requires, or can profitably save, appetite is cloyed and thus nature sets a bound to excess.

Discuss the nature and effects of alcohol, comparing these with the definition of a true food. Show (1) that as Dr. Hewes points out, "alcohol can not replace a similar material in the tissues, since it is not a fixed constituent of the body"; (2) it can not be considered a true energy-supplying food for muscular or mental effort, for Kraepelin, Lombard, Aschaffenburg, and others have reported experiments which show that small amounts of alcohol cause diminution in the total capacity for such work; (3) it can not supply the needs of the body for a heat-making food because its effect upon the nervous system is such that the blood is sent to the surface and cooled and as much or more heat than was obtained is dissipated; when large amounts are used the body temperature is considerably lowered. Therefore, although alcohol is oxidized in the body, as are certain other poisons, such as morphine and muscarine, it can not in any proper sense be called a food, because even when taken in amounts much smaller than the needs of the system for heat-making food (it can not make or repair tissue), it is a proto-

plasmic poison, injuring both the structure and functions of the body.

Moreover, while the use of true foods in proper amounts satisfies, and excess cloy, alcohol in the form of ardent spirits or of the milder liquors has the power, if used constantly, even in small quantities, to form a narcotic craving for itself which may become uncontrollable. (See page 100). Bring out the fact that the injurious effects of alcoholic beverages are due to the alcohol obtained in them, rather than to impurities or adulterations. (Report of the Committee of Fifty.)

Beers and Wines—Show that the average beer contains about $4\frac{1}{2}$ per cent. of alcohol,



"There is no babe born but may carry furred
Strength to make bloom the world's disastrous wild."

wines 6-13 per cent., and fortified wines (those to which extra alcohol has been added), a much higher alcoholic content, for example, Port, 16-18 per cent. and Marsala, 14-24 per cent. Thus the comparatively small amount of nutritive matter contained in them can not be considered "pure food," for no food material saturated with a narcotic poison, whether alcohol or opium, can be considered a proper food. Compare the relative cost of food values in a nickel's worth of flour or milk with the *pseudo*-food value of a pint of beer. (For further data on wine and beer, see JOURNALS of Nov. 1907, Jan. 1908.)

Alcohol is neither a good nor bad nutritive substance, but a poison; attacking and destroying protoplasm like all other poisonous substances; whereas nutritive substances serve to build up the parts

of protoplasm destroyed by the actions of life.—Prof. Max Kassowitz, Vienna, Austria.

Drink may be all right in its place; but that particular spot is harder to locate every day, and it certainly is not in any sane man's stomach.—The Medical Counsellor, November, 1906.

EFFECTS OF ALCOHOL ON DIGESTIVE ORGANS AND PROCESSES

What are the effects of applying alcohol to the skin? Why do the capillaries soon dilate? What is the result if the part be covered tightly so that the alcohol can not evaporate? Show that the resulting smarting and inflammation show alcohol to be a local irritant. Speak of the fact that if a little be applied to the more sensitive mucous membrane lining the lips, this inner skin whitens and shrivels up as if scalded and is apt to slough off. What would be the probable effect of ardent spirits on the mucous membranes lining the digestive tract? Of weaker liquors? What effects upon the gastric blood vessels? In what way is the gastric juice impaired?

Show that when constantly irritated by the direct action of alcohol, although the person may be what is considered a moderate drinker, such conditions tend to produce chronic congestion of these blood vessels, gastric catarrh, diminished power of secreting gastric juice, and alcoholic dyspepsia, the injury depending largely upon the strength and amount of the drinks used. (H. Newell Martin, M. D., M. A., F. R. S.) What serious effects from the use of large amounts of fluids, as beer, wine or cider? Since alcohol is a narcotic, what effect may it be expected to exert on the muscles producing motility of the stomach?

To what organ does the food and the alcohol absorbed from the stomach first pass? What reasons why the liver suffers more from the use of alcohol than most other organs? What is the nature of the injuries it receives from the use of alcohol? What are the chief effects of distilled liquors upon it? How do those of malt liquors differ? Summarise the effects of alcohol on nutrition.



TO EDUCATORS

IF you are receiving the JOURNAL regularly it is being sent through the courtesy of friends who take this practical method of expressing helpful interest in your work for the children and youth and especially in the teaching of hygiene and temperance. They trust that you will find it of *real* value and suggest that after you have read it you will preserve it for your own future reference or file it in the permanent library where it will be accessible to pupils.

EXPERIMENTS FOR DETECTING FOOD ADULTERATION

Arranged from Bulletin No. 100, U. S. Bureau of Chemistry.

Experiment 1. To Test Milk.

NOTE—Formaldehyde is the substance most often used for preserving milk, and is rarely, if ever, added to any other food. Boric acid, or borax, are also occasionally used for the same purpose.

A. To Test Milk for Formaldehyde.

Place 3 or 4 tablespoonfuls of the sample of milk in a teacup with at least an equal amount of strong hydrochloric (muriatic) acid* and a piece of iron alum about as large as a pinhead. Mix the liquids by a gentle rotary motion and place the cup in a vessel of boiling water. If formaldehyde be present, at the end of 5 minutes the mixture will be distinctly purple. If too much heat be applied, the mixture will be **muddy**.

If the milk shows a pinkish tinge when only the hydrochloric acid has been added, it is probable that a coal tar color is present.

B. To test Milk for Borax or Boric Acid.

Place 3 tablespoonfuls of milk in a clean bottle and add twice the amount of a solution of a teaspoonful of iron alum in a pint of water. Shake vigorously and filter. A clear or only slightly turbid liquid passes through the filter paper. Put a teaspoonful of this liquid in any dish not metal and add 5 drops of hydrochloric acid.* Dip a slip of tumeric paper into the liquid and dry near the lamp or stove. Touch one end with a drop of household ammonia. A cherry-red color before the addition of the ammonia and a dark green or greenish black afterwards shows the presence of borax or boric acid. The ammonia test is better because an excess of hydrochloric acid may cause the tumeric paper to take on a brownish red color, even in the absence of the boric acid. In this case, however, the ammonia changes the color to brown just as it does the tumeric paper, which has not been dipped in the acid solution.

Experiment 2. To Test Butter.

A. To Distinguish Between Oleomargarine, Rejuvenated and Fresh Butter.

Place a lump of butter the size of a large bean in a large spoon and heat over a gas jet or a lamp. If the sample is fresh butter it will boil quietly with considerable foam, while oleomargarine or process butter will sputter and crackle.

B. Heat 2 ounces of sweet milk in a bottle set in boiling water. Add a teaspoonful of the butter to be tested and stir the mixture with a splinter of wood until the fat is melted. Cool mixture by setting in ice water and stir until the fat solidifies. Butter

either fresh or renovated will solidify in tiny granules distributed through the milk. Oleo-margarine solidifies in one mass and may be lifted out on the stirrer.

Experiment 3. To Test Meat Products Such as Sausages and Chopped Meat.

NOTE—All varieties of meat that are sold in a finely comminuted state, such as chopped meat, Hamburg steak, and sausage, are likely to have a preservative added in their preparation. By this statement, it is not meant that preservatives are added in all cases. Their use, however, simplifies the keeping of such preparations and is not unusual. The preservatives most commonly used with meat are borax, or boric acid, and sulphites. Oysters, when kept in bulk after shucking, are also frequently preserved.

A. To Test for Borax or Boric Acid.

Thoroughly macerate about a tablespoonful of the chopped meat with a little hot water and press through clean white cotton cloth. Place 2 tablespoonfuls of this liquid in a sauce dish and add 35 drops of strong hydrochloric acid.* Filter the mixture through filter paper and test with tumeric paper as directed for milk (Experiment 1, B).

Experiment 4. To Test Canned Vegetables for the Detection of Copper.

NOTE—Copper is often used to deepen the green tint of imported canned peas, beans, spinach, etc.

A. To Test for Copper.

Mash some of the sample in a dish with stiff kitchen spoon. Place a teaspoonful of the pulp in a teacup with 3 teaspoonfuls of water and add 30 drops of strong hydrochloric acid* with a medicine dropper. Set the cup on the stove in a saucepan containing boiling water. Drop a bright iron brad or nail (wire nails are best; tin carpet tacks will not answer the purpose), into the cup and keep the water in the saucepan boiling for 20 minutes, stirring the contents of the cup frequently with a splinter of wood. Pour off the contents of the cup and examine the nail. If copper be present in an appreciable amount the nail will be heavily plated with that metal.

*Caution. All tests in which hydrochloric acid is used should be conducted in glass or earthen ware, for this acid attacks and will injure metallic vessels, such as iron, tin, zinc, etc. Care must also be taken not to bring it in contact with flesh or clothes. If by accident a drop of it falls upon the clothes, ammonia, or a solution of saleratus, or of sal soda, in water, should be applied promptly.

Gothamite—"I hear you have a Vassar graduate for a cook. Isn't it rather expensive?"

Harlemite—"Not very. She works for her board and clothes."

Gothamite—"Why, how does she come to do that?"

Harlemite—"She's my wife."—*Exchange.*

MARCH

"Hang out your flags, birch and willow!
Shake out your red tassels, larch!
Up, blades of grass from your pillow,
Hear who is calling you, March!"



AN OVERTONE

BY EVERETT H. HASTINGS

Warm, sweet and true, the Spirit's will
With highest purpose seeks its own
Until our noblest moods reflect
One love, one life, one thought alone.

That love, the Father's, wide diffused;
That life through all creation flows;
That thought in swift transmuting touch
The heart of being doth disclose.



And whether Art or Nature brings
Transcendent beauty's subtle thrill
Lo! in the heart some sense bespeaks
A deeper, richer beauty still.

Its presence lifts the soul until,
To larger sense and vision stirred
All life illuminated stands,
Each part a fragment of the "Word."

We see the kinship so divine,
A cord of gold, the whole to bind,
With service standing glorified
As purpose of the Master Mind.

So shall the Universal Life
Be of us, not a thing apart
And ev'ry sense an octave bring
To swell the anthem of the heart.

A COMPARISON OF FOOD VALUES

BY G. O. HIGLEY

Professor of Chemistry, Ohio Wesleyan University,
Delaware, O.

ONE method of comparison of food values is to ascertain what amounts of each kind of food stuff, proteid, carbohydrate, and fat, would be needed daily to sustain a man engaged in hard muscular work, and then to determine how this need could be met with beer at five cents per glass, and with, we will say, flour at 2.86 cents per pound.

A nickel's worth of beer contained .26 ounces of alcohol, .38 ounces of extract, of which .037 ounces were albuminoids and .343 ounces carbohydrates, and no fats.

A nickel's worth of flour contains 2.95 ounces of dry proteids, 20.93 ounces of dry carbohydrates, and .28 ounces of fats.

Perhaps the ration which has met with most favor in scientific circles, and which has been most employed as a basis of the daily ration of armies, is that of the celebrated German physiologist, Voit, which is as follows: Proteids, 4 ounces; carbohydrates, 18 ounces; fats, 2 ounces.

A brief calculation shows that to furnish the four ounces of proteids and the eighteen ounces of carbohydrates needed daily, there must be ingested to supply the proteids 108 glasses of beer, at a cost of \$5.40, or to supply the carbohydrates, 52 glasses at \$2.60.

Considered, then, with reference to the amount and kind of solid material present in it, beer is a highly expensive substance, since a man would need to swallow daily twenty-seven quarts of the liquid, containing twenty-nine ounces, by weight, of absolute alcohol, to supply himself with the necessary proteids, or about thirteen quarts to supply the carbohydrates.

To furnish heat equal to that obtained from a nickel's worth of flour requires the alcohol and solids of 29.6 glasses of beer, containing about 7.7 ounces of alcohol and costing \$1.48. It seems quite clear, then, that the working-man can not afford to purchase heat-producing food at such tremendous cost. What he needs is not beer, but plenty of good bread, meat, cheese, and other real foods, to build up his body, and to furnish the energy necessary for his hard work.

Says the eminent physiologist, Professor E. A. Schaefer: "It can not in fact be doubted that any small production of energy resulting from the oxidation [of alcohol] is more than counterbalanced by its deleterious influence as a drug upon the tissue elements."—*Issue*.

OUR BOOK TABLE

ONE who wishes to read a scholarly, unbiased, and comprehensive study of the effects of alcohol upon the mind of man will find it in *The Psychology of Alcoholism*.* The basis is physiological, including a critique of the various theories involved and the latest evidence thereon.

The interference of alcohol with nutrition and hence with the supply of nervous energy, is shown to be at the foundation of much of the mental trouble of the inebriate. Like other investigators, the author compares the effects of alcohol to the effects of fatigue; it causes cell lesions similar to those caused by fatigue; and a similar lack of nervous force, leading to slow, inharmonious mental action and weakened will. The loss of will-power through alcohol was tested and former reports verified by a series of ergograph and tapping experiments.

Hinging upon the weakened will is the inability to control mental action, to exclude depressing thoughts by concentrating upon better ones, while the lowered nervous pressure is insufficient to bring forward the pleasureable emotions that come in only on the higher tides of energy. Painful emotions rise easily, pleasurable ones less easily. Full nutrition and the bounding pulse of energy force the pleasurable feelings to the foreground; low nutrition and diminished nerve force keep in prominence only the gloomy emotions. If the victim drinks "to drown his sorrows," he obtains a brief respite at the expense of worse gloom afterward. The casual relation between mental depression and some serious bodily troubles to which drinkers are subject is also brought out, while between the lines one finds valuable information for a better understanding of mental hygiene apart from the subject of alcohol.

The effect of alcohol upon the senses, upon the morals, as a cause of insanity, and various methods of cure of which the author considers religious conversion the most efficacious, are treated with the same thoroughness and painstaking.

The chapter on insanity closes with a sentence that is equally applicable to crime, poverty, and other great drains upon the nation's vitality and resources, "By eliminating alcoholic drinking from our social system, one of the most prolific, exciting, and predisposing causes of insanity would be eradicated."

In *Hygiene*** are included some excellent chapters, mostly on the subject of sanitary science, with one or two bearing directly on

personal hygiene. Written for English readers, it is less well adapted to conditions here than some similar American works, but it is suggestive nevertheless. However, it is no less surprising than regrettable that in this late revision the authors should again justify the moderate use of alcoholic beverages for removing fatigue and for the "old and feeble," etc. Thus they utterly ignore the findings of some of the greatest physicians and scientists of England, Germany, and other countries, who describe the effects of alcohol as similar to those of fatigue, and causal factors in the production of premature old age.

*Carpenter's Industrial Reader—Foods.**** the first of a new series of supplementary readers, shows how civilization and commerce grew from man's need of foods and the exchange of goods between the various nations. The author takes the children on personally conducted tours to the great food centers of the world, to the markets of exchange, to the factories, the farms, the forests, and the seas. Together they visit the wheat fields, the flour mills, the cattle ranches, and the packing houses. They learn to understand the manufacture of dairy products, and go to the fisheries, to the orchards and vineyards, and to the tea, coffee, rice, and sugar plantations. The volume is as in-

teresting as any story book, and is profusely and attractively illustrated from photographs.

(Continued from page 103.)

Show that gymnastics, etc., are for the purpose of helping form straight and symmetrical bodies.

Give special directions as to the care of the joints, particularly of the knee; also as to the care of the spine, showing that fearful curvatures have often come from comparatively slight injuries occurring in childhood or youth. Speak also of avoidance of tight clothing.

Warn earnestly against the use of cigarettes, which are likely to stunt the bodies of all boys who use them. Appeal to the child's desire to grow strong and beautiful, and thus encourage him to live hygienically and avoid those habits and vices which destroy beauty and strength.

***PSYCHOLOGY OF ALCOHOLISM**, by Geo. R. Cutten, B. D., M. A., Ph. D. 357 pages. Price prepaid, \$1.65. New York: Scribner's. See also advertisement below.

****HYGIENE**, by J. Lane Notter, M. A., M. D., and R. H. Firth, Lieut.-Col., Royal Army Medical Corps. Sixth edition. 500 pages. New York and London: Longman's Green & Co.

*****CARPENTER'S INDUSTRIAL READER—FOODS**, by Frank G. Carpenter. Cloth, 12 mo., 362 pages. Profusely illustrated. Price, \$.60. New York, Cincinnati and Chicago: American Book Co.

The Latest Authoritative Books on the Alcohol Question

Alcohol and the Human Body

— BY —

Sir Victor Horsely, Hon. M. D., Prof. Pathology,
University College, London.

— AND —

Marv D. Sturge, M. D., Birmingham and
Midland Hospital for Women.

PARTIAL CONTENTS—Alcohol a Drug; Effect of Alcohol on Intellectual Processes; Degeneration and Disease of the Nervous System Due to Alcohol; Action of Alcohol on the Digestive System, Is Alcohol a Food, Effect of Alcohol Upon the Heart; on Power to Resist Disease; upon Children; upon the Race.

ABSORBINGLY INTERESTING

SCIENTIFIC AND UP-TO-DATE

INDISPENSIBLE TO EDUCATORS

370 Pages 16 Beautiful Plates 21 Diagrams

Price, \$1.50 Postage, \$.15

Alcohol and the Human Body, \$1.65	} ONLY	\$1.80
or		
Psychology of Alcoholism, 1.65		
Physiology Journal, one year, .60		

Psychology of Alcoholism

— BY —

GEO. B. CUTTEN, B. D., M. A. Ph., D.,
(Yale)

A Summary of Research (750 references) covers whole ground of Effects of Alcohol on Nervous System, Intellect, Will, Emotions, Senses, Insanity and of Cures by Hypnotism and Conversion.

**Shows Clearly the Relation
Between the Use of Alcohol
and Mental States.**

357 PAGES

20 ILLUSTRATIONS

Price, \$1.50 Postage, \$.15

Alcohol and the Human Body, \$1.65	} ONLY	\$3.00
Psychology of Alcoholism, 1.65		
Physiology Journal, one year .60		

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

A GRAND PREMIUM OFFER

FOR THIRTY DAYS ONLY



THE CUT SHOWS THE EXACT SIZE

EVERY PEN WARRANTED

THIS IS THE PEN

WE have been successful in closing a special contract with THE CONSOLIDATED FOUNTAIN PEN Co., of Brooklyn, N. Y., whereby we can supply a guaranteed **SOLID GOLD FOUNTAIN PEN,**

The "Celtric Model 1,"

To every subscriber, old or new, who sends us fifty cents for a year's subscription and fifty cents additional.

The "Celtric Model 1" compares favorably with any \$2.00 pen on the market today. The pen will be forwarded immediately upon receipt of the money.

A DESCRIPTION OF THE PEN

The stock is made of the best quality of hard rubber, beautifully chased, and fitted in four parts; the pen is 14-k gold, fitted with iridium points, and the feed is guaranteed by the manufacturers to flow evenly without leaking or blotting. Pen can be furnished with stub, medium, or fine pen point as desired.

"A FOUNTAIN PEN IS A NECESSITY OF THE TWENTIETH CENTURY"

The Egyptians used a split reed; our grandfathers, a goosequill; our fathers, a steel or ordinary gold pen. But today we want

A Fountain Pen

that dispenses with the inconvenient inkstand, that does not corrode, and that is always ready for use. Bears the manufacturer's guarantee that the pen is solid GOLD 14-k fine. If it does not prove satisfactory in every way we will exchange it for another, or return the fifty cents additional, if the pen is returned within 30 days.

This is an unusual opportunity to secure, at a very low price, an article of superior quality that is coming to be essential to the comfort and convenience of every one who writes

For Thirty Days Only, Journal and Pen, \$1.00

SCHOOL PHYSIOLOGY JOURNAL

23 TRULL STREET

BOSTON, MASS.

592.

Modern Civilization and the Campaign Against Alcohol

By Johannes Bergman, Ph. D.

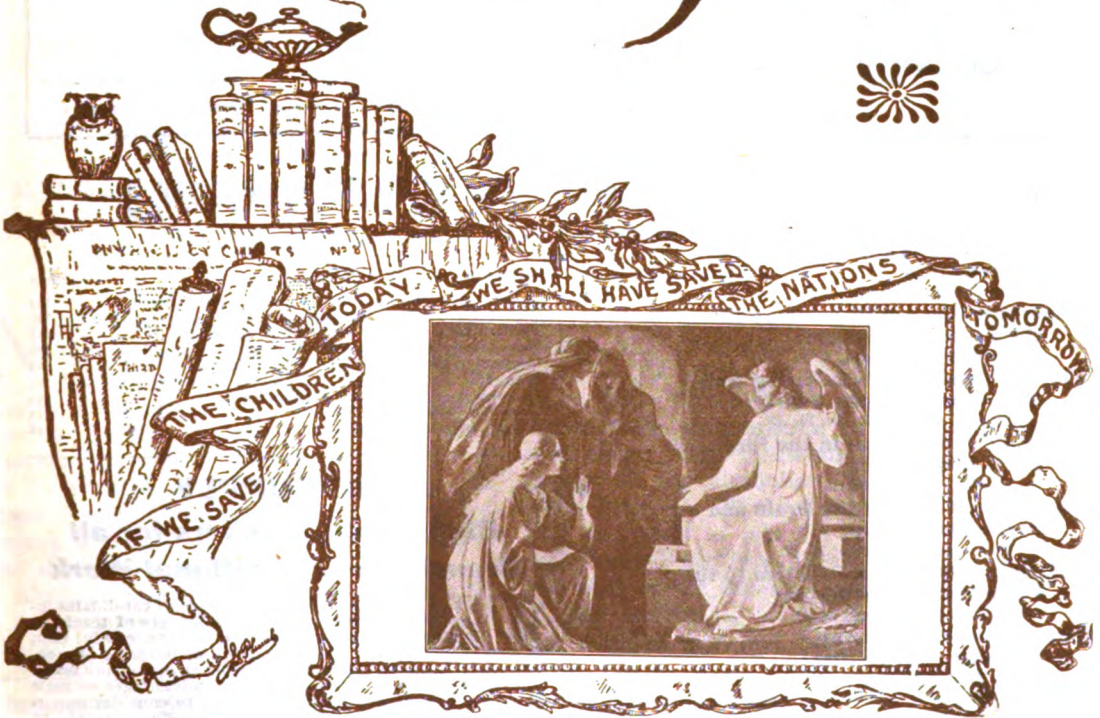
Connection Between Tuberculosis and Alcohol

By George Liebe, M. D., Germany.

Boston Public Lib



THE SCHOOL PHYSIOLOGY JOURNAL



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVII. NO. 8

APRIL, 1908.

Harmonic Music Series

SIX BOOKS

The most musical and scientific, as well as the simplest course of school music extant.

TO THE SUPERVISOR it affords an abundance of the very best music, systematically arranged for schoolroom use.

TO THE GRADE TEACHER it affords every assistance for the proper presentation of every lesson, thus securing direct results and saving time.

TO THE PUPIL it affords the cream of song literature, from the simplest melody to the oratorio chorus, and gives a consistent training in every essential factor of a music education.

Write TODAY for full information

American Book Company

New York

Cincinnati

Chicago

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

Child's Book of Health. Revised Edition.

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

How to Keep Well. Revised Edition.

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition.

The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health.

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology.

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

San Francisco

Atlanta

Dallas

Columbus

NEW SCIENTIFIC TEMPERANCE LEAFLETS

PRICE PER 100

Social Service in the Temperance Reformation

By Cora F. Stoddard, A. B.

\$2.00

Important Place of Physiology in the School Curriculum

By Prof. F. M. Gregg, A. M.

1.00

The Problem of Americanizing One Million Immigrants Yearly

By J. C. Jackson, D. D., Ph. D.

.75

Scientific Temperance in the First Six School Grades

By Mrs. Annie W. Clark

.30

Alcohol as it Affects the Brain and Nerve Tissue

By Vaclav H. Podstata, M. D.

.75

Relation of the Drink Problem to the Perpetuity of the Nation

By T. A. MacNicholl, M. D.

1.00

They Want Your Money (Popular Beer Leaflet)

By E. L. Transeau.

.45

Fresh, Attractive

Powerfully Convincing

Samples of Each, only \$.10

PRICE PER 100

International Course of Study,

\$3.50

Recommended for use in elementary schools of Great Britain by the Committee representing 15,000 British Physicians. Used in whole or in part in several states, and many counties and cities of America.

The Use of Tobacco,

\$2.00

By Winfield S. Hall, Ph. D., M. D.

(Reprint of Article in February 1908, JOURNAL.)

CONTENTS

	PAGE
Modern Civilization and the Campaign Against Alcohol	113
Cigaret Habit in the High School	116
Primary Lesson—Third Year—Blood and Heart	118
How Johnny Learned to Wipe His Feet	119
Connection Between Tuberculosis and Alcohol	121
Editorials	123
Temperance Education Behind Prohibition	124
Grammar Lesson—Respiration	125
Development of the Lungs	128

WE SUPPLY

High-Grade Teachers for all Branches of Educational Work

THOROUGH investigation of records of candidates insure best possible service to employers of teachers. Methods broader in scope and more successful than any teachers' agency. Offices in 12 cities covering the entire country enable us to supply men or opportunities in almost any locality desired. Special advantages to male teachers desiring promotion or willing to consider opportunities in business or technical work. We guarantee to every applicant active and aggressive efforts.

List of positions open free if you write us today, stating age, experience and salary desired.

HAPCOODS

The National Organization of Brain Brokers

SUITE 144, 305 BROADWAY, N. Y.

1215 COMMONWEALTH TRUST BLDG., PHILADELPHIA, PA.

1015 HARTFORD BLDG., CHICAGO, ILL.

(Other Offices in other cities.)

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

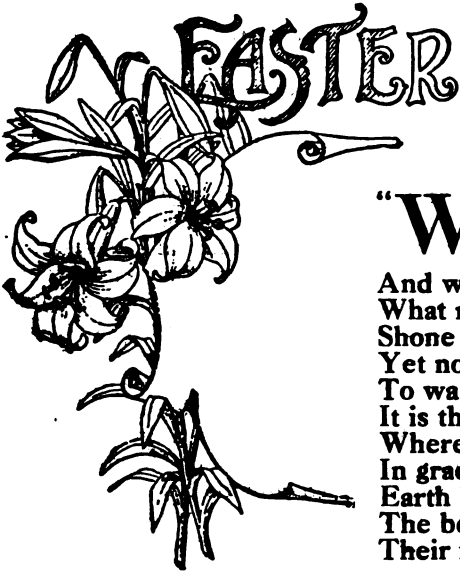
Digitized by Google

School Physiology Journal

Vol. XVII

BOSTON, APRIL, 1908

No. 8



“WHAT holy dawn is this that breaks afar,
And changes dusky skies to rose and gold,
Until heaven's mighty arches wide unfold,
And where was night the day's full glories are?
What notes are these that, when a single star
Shone over Calvary, funeral tolled,
Yet now peal forth so jubilant and bold
To wake the world, and blissful tidings bear?
It is the dawning of that joyful day
Whereon He rose who lay in Joseph's tomb,
In gracious sign of immortality;
Earth hails with sweet accord the Saviour's sway.
The bells ring out, and lilies all a-bloom,
Their fragrant silver trumpets lift on high.”



MODERN CIVILIZATION AND THE CAMPAIGN AGAINST ALCOHOL

BY JOHANNES BERGMANN, PH. D., STOCKHOLM, SWEDEN

President of The International Temperance Bureau

NEVER before in history has civilization advanced farther than today, but, the higher the building the larger the shadow it throws. . . . In the midst of man's greatest work a paralysis seizes him and weakens his power. This is alcoholism. If we do not find some means of stopping this internal source of destruction, our civilized nations will sink into degeneration and give way to abstinent races.

Alcoholism, as an international popular evil, is a phenomenon of modern civilization. The alcohol question is one of the most urgent problems of our time. To ascertain the causes, and, if possible, to remove them, that is the great problem. People will laugh and say this is an exaggeration, but, ladies and gentlemen, when the house is on fire what is the most important thing? Is it the time to observe the beautiful bay window, to admire the fine paintings, to be concerned about the furnishings of the rooms? No, the chief thing is to put out the fire, and who dares deny that alcohol is not a fire that is consuming the structures of our modern civilization?

In all lands statistics show the figures of

an alarming degeneracy. Nothing is so evident as that alcoholism is a great consuming force in the edifice of our modern civilization. More than half the crimes in all lands where there are statistics, can be traced to alcoholism. The thousands of imbecile offspring of the alcoholized parents speak a plain language. We can not, of course, expect everybody to join the ranks of the firemen; but it is our duty to see that no one makes the work of the firemen more difficult. The general sanctioning of the drink customs by the so-called moderate, habitual use of alcoholic drinks is a potent fanning of the flames in the structure of modern civilization.

A prevailing opinion concerning the movement against alcoholism is that we endeavor, or at least should direct our endeavors, to rescue the drunkard from the gutter. We are looked upon as a charitable organization and praised that we take an interest in these unhappy defectives who have, so to say, strayed beyond the bounds of moderation. True, it is these individuals, in the deserts of life, who show most clearly the injurious nature of alcoholic drinks. It was therefore

natural that men's attention should first be directed to these persons and that the temperance movement at first appeared to be only for the rescue of the individual drinker, and it is natural that this old conception of the work should become common.

But the workers themselves in this cause have long seen that it is not worth their while to waste their whole energies in rescue work. They see that it is of little use to search beyond the wall of moderation for those who have strayed when all the while new wanderers are being sent over from the inside. There must be a systematic healing of the disease.

Time has made great changes in this as in other fields. In olden times people knew only the fermented drinks. Distillation is a discovery of the middle ages. Not until the close of the fifteenth century did brandy begin to play a role. At first it was looked upon by the superstitious people, and by scarcely less superstitious science, as an elixir of life.

Then came the more enlightened times, and men learned, by more or less dearly-bought experience, to give up the idea that alcohol could prolong life, but they still regarded it as a valuable help to cheerfulness, a preventive against the plague and other diseases.

At this time, that is, at the end of the Thirty Years' War, intoxication was not looked upon as anything disgraceful; it was even regarded as good form, now and then, on certain occasions,—there was a code of drunkenness—to get drunk. A good example of this is the Reformation Festival given by the Swedish king, Charles XI, in 1693. It was a great festival at the palace at Upsala to celebrate the hundredth anniversary of the establishment of the Reformation, therefore, a religious festival.

This king, Charles XI, was a particularly God-fearing ruler and his guests were theologians, bishops, professors in Upsala, foreign ministers, counsellors of state, etc. It is related, on trustworthy authority, that the ecclesiastical dignitaries, the high officials, and even the king danced on the tables until they fell under them.

That, of course, was very scandalous, but no worse than might have occurred in Germany, for Melancthon said: "We Germans drink ourselves poor, we drink ourselves sick, we drink ourselves dead, and we drink ourselves into hell." And Sebastian Frank said: "Scarcely one man in ten now dies a natural death, and more are drowned in their cups than in the water." That also is not especially Swedish but international as well, at least in northern Europe.

The characteristics of those times was not

that these scandals existed; but that they were not looked upon as scandals of which one ought to be ashamed. At those Reformation Festivals it was thought as natural that on such occasions men should get drunk as it is now that on certain occasions they laugh.

Then came the time that men honored with the name of "the age of enlightenment." That was the time of clear—even if not so deep—thinking about the practical doctrine of utility. Such a time is particularly disposed to temperance in every meaning of the word. It was at this time that the first impetus was given to the modern anti-alcohol movement.

The opinion among influential classes in the eighteenth century was that intoxicating drinks were beneficial if taken in moderation, but injurious if one became intoxicated. This idea is an advance over that of the time of the Thirty Years' War. But men did not remain here. About the middle of the last century (1851), Magnus Huss, a Swede, brought out his epoch-making book on chronic alcoholism, which called attention to the fact that many morbid symptoms which had been treated as sporadic without an understanding of their cause, were a national disease, and he gave to this the subsequently much-used name of alcoholism.

A large number of investigators have now thoroughly studied the alcohol question, but it was possible for one who led in such study at that time to declare the so-called moderate use of alcoholic drinks beneficial, or at least not injurious. But since the investigations were made by psychologists and psychiatrists of our time to determine the effect of small doses upon the activity of thought and feeling, the connection with nervous and mental diseases, as well as the inheritability of alcoholism, the generation of younger physicians today is of a different opinion.

A Swedish professor of medicine, Almqvist, has said in a recent lecture, that men now-a-days die from alcoholism without its being possible to show that they were ever intoxicated even once in their lives. Such a remark would be inexplicable from the older standpoint that looked upon the danger in alcoholism as lying only in intoxication.

If, therefore, it is now known that even the so-called moderate use of alcoholic drinks is deleterious to the normal organism, it can not be looked upon as a renunciation, as a kind of asceticism, if one refrains from such self-injury. A great religious writer living in Bremen, once said, in speaking of a certain condition in England, "If now, ten thousand or hundreds of thousands who have the same feelings as we, nevertheless forego drinking in order to set a good example be-

fore their fellow men who are slaves to alcohol, that is a heroic act of brotherly love which calls out our highest admiration and self-condemnation."

It was Funcke who said that, but his words are characteristic of the older opinions on this question, the opinion that alcohol is something good, and that to refrain from taking it is great heroism. We do not think so. We regard abstinence as a great advantage for ourselves and of course for others.

The great ethico-social movements of our times herald the coming of a new age, a time of elevation and inspiration, when the ideals of men will grow larger and higher, and when poetry will take incarnate form. Poets and dreamers, you may say, have always been regarded as Utopians. True, but why? Because they have always dreamed only at their desks or over their wine. But give us a poetry of deeds and then Utopia will not longer be Utopian.

A noted German, the talented but unfortunate Nietzsche, has said, "What to me is their drink and their drunkenness? What need of wine has the man who is inspired? He looks with disgust upon the means and agents used to produce an effect without sufficient cause, an aping of the soul's high tide." Again he says, "Art itself is a wine. It is better for a man to have no need of other wine, but to keep water, and by the inner fire, the inner sweetness of the soul, ever anew to change the water into wine." Nietzsche was probably also a Utopian, but that does not make these ideas Utopian....

The present seldom understands fully the cause of its own conditions, but those who read history a hundred years from now will read with throbbing hearts of the glorious world-struggle which the German people instigated and which, let us hope, they will fight out during the twentieth century to a victory over the oldest enemy of mankind. He is old, this enemy, as we have said, but we

live in a wonderful age, an age which makes an epoch in history that was never made before. Many old errors, old prejudices and old customs which injured us have been set aside. A higher and greater future is before us, and it is quite as possible that we shall leave behind the alcoholic customs as it was that the people of a thousand years ago should have laid aside tattooing when they became civilized.

The solution of this social question is the special duty of our time.... It is of the utmost importance that we Germans, who have suffered so much from alcohol, and have so many thousands still suffering should obtain a clear victory over it. To do this will be a worthier achievement than most of the great deeds on the page of history.... We would not force everyone to our way of thinking; we would simply say that according to our way of thinking, that according to our experience, abstinence is the most successful method.

I might also say our experience in Sweden teaches us that where no alcohol is used, society has a much happier and more cultivated tone than it has where beer, wine and brandy are used. That has been amply shown in America. American social life has an instructive characteristic. People come together not simply to eat and drink; the material

side is subordinate. They meet to learn something, to hear something....

Life's pleasures are enhanced by abstinence.... There is another intoxication than the intoxication from alcohol, it is the intoxication of the ideal, the intoxication of a society that is worthy of men, the intoxication of poetry, and especially of the poetry of deeds.—*An abridged translation of a paper read at Bremen Anti-Alcohol Congress, 1903.*

✱

"A soft breeze kissed the expectant morn,
A bluebird sang a witching strain,
A rose burst forth and Spring was born."



"When Easter comes, ah! happy day,
E'en tears like dewdrops glisten,
And songs climb up the heavenward way
While angels bend to listen,
For love and life and joy untold
Are in the age-long story."

THE CIGARET HABIT IN THE HIGH SCHOOL

By the late Mary H. Hunt

SMOKING among school boys is not of recent origin. Shortly after Sir Walter Raleigh made tobacco popular in England, we read in the chronicles of our deluded English ancestors of good mothers who sent their boys to school provided with pipes as carefully filled as were their lunch baskets, and of grave old dominies who smoked with their pupils and taught them how to hold their pipes and inhale the fumes. The mothers and dominies had no way of knowing that they were instituting a vice that was destined to injure the youth of all nations until now the cigaret, the twentieth century boy's particular saint, is manufactured in billions yearly.

CAUSES OF THE EVIL

The causes of the rapid increase of this evil are to be sought in the circumstances that surround the boy and in the nature of the cigaret itself.

Many an American boy includes the presence of tobacco smoke in his idea of home and comfort, for he has been constantly associated with it since he was a little chap. His father's friends, also, whom he seldom sees without a pipe or cigar, early fill the boy with a respect for the weed, and long generations of smoking ancestors have done their utmost towards leaving him as an inheritance a system predisposed to the narcotic appetite. As Hon. W. W. Stetson, formerly superintendent of schools in Maine, has said, "The cigaret smoker is born short in one side of his nature."

The boy goes out into the world and forms older associates whom he admires and wishes to copy. If they smoke, and record shows that a large percentage of them do, their young admirer is ready to smoke, too, in the same spirit that he copies their modes of dress and affects their opinions and ways of expression. His associates are usually ready to supply him with materials for his first trial, and tobacco stores are generally near. One especially evil influence among high school boys is the widespread practice of smoking in colleges. The high school boy endorses with great promptness and zeal what his college brother does, and when it is known that cigaret smoking is the rage in colleges, it is not strange that the fashion is considered smart and worthy of following by the high school youth.

The mental attitude of the average high school boy is not one that leads him to ponder deeply over the pros and cons of the tobacco problem. His faculties are not sufficiently developed to lead him to reason beyond his own

limited experience of a decade and a half of years, and he is apt to consider inaccurate and trite the objections which parents and teachers make to the habit. The people he has seen smoking are still living, and he does not realize that tobacco is limiting their working ability and usefulness. He reasons that if the practice is safe for them it will be for him, too. So, if he is not early taught intelligent reasons for not smoking, many a good, respectable boy, while he may refrain in public places so as not to cause anxiety to his parents, will, when alone with his friends, puff what he considers the fascinating emblem of manhood all he wishes. Thus the habit becomes fastened. When the boy begins to realize the consequences, if he is strong enough he may shake it off, but too often it has given him a physical bias that prevents his even wishing to be rid of it. A. Wynter Blyth, an eminent English chemist and writer on poisons, says:

"All species of tobacco contain a liquid, volatile, poisonous alkaloid called nicotine, which is a narcotic and like other narcotics, nicotine has a benumbing and paralyzant effect on the brain and nervous system." This explains the happy-go-lucky feeling which is the alluring charm following smoking. The brain that should be alert and active and the nerves that should be reliable reporters to the brain are somewhat benumbed with the nicotine. Of course a boy with benumbed brain and nerves will not be found at the head of his class. The effort to stop is a hard one, because tobacco like such other narcotics as alcohol and opium, has the power to create an insatiate craving for more.

The reasons why the boy chooses the cigaret in preference to other forms of tobacco are first, that it is mild and produces no such distressing consequences on first use as the pipe, and, secondly, it is cheap. A package containing five cigarets can be bought for two cents. Ten dollars annually will furnish a boy with enough cigarets to keep him smoking during most of his waking hours. Thus cigarets are available if the boy wants them.

DEPLORABLE EXTENT OF THE HABIT

There are two classes of high school smokers, those who smoked before they entered the high school, and those who contract the habit during the course. The first class is small, for juvenile smokers seldom reach the high school or even go through the grammar grades. Tobacco dulls their mental faculties to such an extent that they fail to keep up in

their studies, and consequently often average two years older than the rest of the class in which we find them. Soon they drop out of school altogether. Weak and without ambition, they frequently drift into crime. General Superintendent Torrance of the Illinois State Reformatory is reported as saying that of 278 boys of grammar and high school age in his reformatory, 92 per cent were smokers and 85 per cent cigaret fiends.

Of the class who begin to smoke in the high school, the number must be comparatively large judging from the number of smoking college freshmen who are largely boys who go directly from the high school to college. But it consists of more hopeful material, inasmuch as the habit is new and can be cured by proper remedies.

THE REAL SOLUTION OF THE PROBLEM

Of course, public opinion is against the cigaret habit among the young and many remedies have been proposed for it. Legislatures have tried to check it by prohibiting the sale or even the giving of cigarets to minors. Churches have been useful in arousing public sentiment. Anti-cigaret leagues have been created. Fathers have given up smoking thinking that their sons would follow their example. Mothers have tried to find their boys better associates in the hope that this would allay the evil; they have appealed to manliness, and showed the extravagance, uncleanness and selfishness of the practice. While the home, the church, and the law should not cease their efforts, the real solution lies with the school beginning with the lowest primary grades. A Chinese who had smoked opium from his fifteenth year was asked why he began the habit. "Didn't have no sense," he said, and that is what the cigaret fiend might say also. It is strange that when ignorance is known to be the main support of this vice that the method of preventing the vice by removing the ignorance before the cigaret habit is formed, is not eagerly adopted. The only sure way of preventing cigaret smoking in the high school is to begin in the first primary grade to teach the boy with other laws of health, simple physiological reasons adapted to his capacity that show why he should not smoke, and to continue this instruction as a more progressive study with new matter which gives each year more of the physiological reasons for abstinence from tobacco in all forms as well as for the observance of other hygienic laws. If this study is thus properly graded, it will be a progressive development and not a repetition and will send the boy to the high school

having been too well-informed from the first to dull his brain or to limit his future possibilities by nicotine.

The public school study of hygiene and temperance which includes warning instruction as to the nature of tobacco and its effects upon the human system, is legally engrafted on the public school system of this entire nation. This legislation began quite generally to go into force about fifteen years ago. If, during this time, school committees, school boards, trustees, and school superintendents had more generally made a place in the school curriculum for enough well-graded lessons to cover the subject, say twenty per year in the primary and thirty per year in the grammar and first year of the high school, with good books in the hands of pupils who have books in other studies, there would be fewer cigaret smokers today. To limit this instruction to the higher grades is to wait until the mischief is begun. We can not undo this wrong to the children in the past, but innocent faces of the little ones in the primary grades appeal to us against the repeating of it in the future.

A committee of distinguished citizens in co-operation with the Woman's Christian Temperance Union of New York published in a sixteen page pamphlet in 1902 returns of a careful canvass of inquiry for results following the legal requirement of this educational method throughout that great state. In summing up the results of that canvass they said:

"We rejoice in the measure of success that has attended our present method of teaching physiology and hygiene. The testimony in our possession shows that as an educational force for right living this study has passed beyond the experimental stage to that of results justifying the expectation that this form of education is destined to overthrow the greatest evil and peril of our times."

The following are a few extracts from pages of testimony this committee printed from nearly every county in the Empire State. They furnish direct evidence that early and continuous education against alcohol and tobacco does educate to right habits.

"As far as known, only two boys in our school use tobacco. Registration during the year, 812." (Nassau County.)

"It is doing much in the way of better living, especially in regard to pure air, good food and cleanliness, and to the use of cigarets by young boys." (Duchess County.)

"The boys do not now consider it smart to smoke. There is not to my knowledge a single boy under sixteen in the village who smokes." (Columbia County.)

Two thousand years ago the prophet said, "My people are destroyed for lack of knowledge." The extension of knowledge is helping to save the twentieth century people from this destruction which now threatens them.

"Life's mystery is: what parents do is mirrored in their children; changeless laws proclaim
That neither intercession, prayer, nor yet repentance, can atone for deeds by parents done,

Transgression of the flesh.
'Tis sins like these will
cheat mankind of half
His heritage; take from
his nerves the steel,
His bones the marrow,
rob his brain of strength."



"I'd laugh to-day, to-day is
brief,
I would not wait for any-
thing;
I'd use to-day that cannot
last,
Be glad to-day and sing."

Primary Lesson—The Blood and Circulation

FOR THE FIRST YEAR

Blood needed in all parts of the body.—Review briefly what the children have previously learned about the necessity of food for growth, repair and work, and the need of digesting that food so that it can be used by the body. When the food is digested and ready for use by the muscles and other parts, how can it get to them? What happens if one pricks or cuts through the skin of any part of the body? What does that show? What makes up the blood? (Food and drink.) What color is it? What else do you know about it?

How does the blood get to every part?—

Have the children notice the blue veins on the back of the hand and at the temples and ask what is inside of them? Perhaps the veins on someone's hands are more prominent; if so, move the veins a little with the fingers to show that they are tubes. There are blood tubes all over the body. Direct them to find the pulse at the wrist, in the neck and at the temples.

Let them try to find a pulse in the blue veins and discover that the pulse they feel is

not in them. What does this mean? Lead class to see that there must be two kinds of blood tubes. The *veins* carry blood to the heart, and the others, called *arteries*, carry blood from the heart.

What makes the blood flow through the tubes?—Perhaps some child will think that the blood simply runs along of itself. Show that while it might run down hill to the lower parts of the body it could not be expected to flow up hill as it does into the head. What forces it up there? Let them feel the beating of the heart with one hand and the throbbing of the temporal artery with the other and discover that the two keep time. What drives the blood through the tubes?

How does the heart drive the blood?—Provide a rubber ball, or better, a rubber compression bulb, either with or without tubes attached. Show how the bulb sucks up and forces out water as it is compressed and allowed to spring back. Get two chickens' hearts, which may be cooked to avoid unpleasantness in handling. Slice one crosswise and keep the other whole. Let class examine and discover muscle (lean meat) and tubes. Show how the pulling and stretching of the heart

gives rise to the motions that we call its beating. Refer to the question, What does the heart do when it beats? Lead the pupils to give concise answers in their own words.

Let the pupils discover that the water flows into the compression bulb through one tube and out through the other. Compare these tubes with the blood vessels. Show which correspond to veins and which to arteries. Show a diagram of the distribution of the arteries and veins to every part of the body. Ask the question, "How does the blood get to all parts of the body?" and require clear answers.

Care of the heart and blood.—Refer to the fact that the different parts of the body must have a constant supply of food. How is that need met? What, then, is the importance of good pure blood, and a strong heart to pump it to all parts of the body? Emphasize this importance and thus lead the children to see that since life as well as health depends upon taking care of the heart and blood, they must begin now to live hygienically and to avoid everything which would harm them.

Warn against over exercise such as excessive rope-jumping or bicycle-riding, which may stretch the heart too much and it may never be right again.

Ask the children to tell what they think will make good blood. Whatever makes good blood helps the heart. Discuss their answers and write the best on the board.

These should, of course, include simple wholesome food, proper exercise and a full supply of fresh air.

What will injure the blood? Discuss this question similarly to the last. Point out the fact that rich foods, pickles and the like are hard to digest, get the stomach out of order so it can not do its work well, and so are apt to make poor blood.

Drinks like wine, beer and cider which contain alcohol, poison the blood and make it impure so that it does some harm wherever it goes.

Again show the chickens' hearts and note how tough and strong the muscle is and that it has no fat on it. Explain that alcoholic drinks may cause part of this strong muscle to change to fat and fat may collect on it. They will readily see that a fatty heart will be a weak heart, and health or life be endangered.

Warn earnestly against cigarets and especially against inhaling; explain carefully but simply that when the smoke which contains the poisonous nicotine is inhaled into the lungs, some of it passes through the thin membranes directly into the blood and makes it poor and thin, thus the cigaret smoker, especially if he has smoked long, is apt to be thin and pale. Often he cannot run fast or play ball games because his heart, too, has been injured. Tobacco hurts the heart more than almost any other part of the body.

HOW JOHNNIE LEARNED TO WIPE HIS FEET

D ID you wipe your feet, Johnnie?"

"No, Mamma; I forgot."

"Run back and do it, then, please."

"Yes, Mamma."

There was a prolonged and energetic scraping and rubbing of two obedient feet on the hall rug.

"Mamma, won't you tell me why you have to wipe your feet *every* time you come into the house?"

"Yes, if you cannot find out for yourself."

Johnnie looked interested. Mamma always let him find out things for himself when he could. He had found already that there was always a reason behind her commands, and he enjoyed hunting for it.

"Where can I begin?"

"Well, walk all around the rooms, and, when you are near the beginning place, I'll say, Warm!"

That was just like Mamma, and Johnnie knew he was going to have a good time. He

went through the two parlors, but Mamma was silent. Johnnie watched her over his shoulder, and hardly knew when he crossed the threshold into the library.

"Warm!" cried Mamma, suddenly.

Johnnie halted promptly, and looked all about him.

"Don't look too high for the reasons of things," said Mamma with a smile, as Johnnie, not budging an inch, stood rolling his eyes up toward the ceiling.

"Warmer!" as the little lad began to look toward the floor.

"Oh, I spy!" said Johnnie, suddenly. And he picked up a big cake of dry mud from the carpet. "I've found out, Mamma!"

"That is one reason, but there are others."

"In the house, Mamma?"

"Yes, but you can't see them just yet."

"Why can't I see them now, Mamma?"

Mamma laughed, and gave Johnnie a kiss. Then she handed him pencil and paper.

"I will write a question on this paper and you may have until tomorrow night to answer it,—'What makes mud?'"

"Ho! that's easy! Water and dirt!"

"Yes. Write it this way: 'What makes mud? 1. Moisture. 2. Dirt.' Write down everything that you see dropped and left on the sidewalk or in the street. If it is wet, like water, put it under 'Moisture'; if not, put it under 'Dirt.'"

"O, Mamma, what a nice play!"

Johnnie moved over to the window.

"Hullo, here's the sprinkler! Do you spell 'water' with an *a* or an *o*, Mamma?"

"W-a-t-e-r," said Mamma, without a smile, for she never laughed at Johnnie's mistakes, and that was what made Johnnie think she was "lots nicer'n other boys' mmmas."

Presently the city carts came along to gather up the garbage. The barrels were heavy, and the men, to save lifting them, emptied the contents upon the street, and they shoveled it into the carts. They left a good amount behind them, however, and Johnnie got quite excited over trying to write down all the different things of which he saw remnants. Mamma suggested that "garbage" would cover it all, so Johnnie, after much wrinkling of his forehead and twisting of his tongue, wrote "Gobbige," for his Mamma was called away just then.

The ashman came down the street, and he, too, tipped over the barrels, and shoveled the ashes into the cart,—all but what blew away; for the wind was high, and a large part of every shovelful went flying over the street.

Mamma was gone a long time, but when she returned, he called her to the window.

"I don't know how to say things, Mamma. 'There are the sewer men cleaning out the sewers, and they spill the dirty stuff on the street. Then a wagon went by full of old bones and meat from the market, and some of that dropped from the cart. Then there are the horses and dogs and cats, and O, Mamma! I don't think mud is nice; do you?'" Johnnie's little nose puckered up with disgust.

"No, Johnnie."

Mamma smiled meaningly.

"O, Mamma! I've found out already; haven't I, Mamma?"

"Yes, part of it."

"What else is there, Mamma?"

"Draw two circles of the same size on your paper."

So Johnnie got the compasses which Mamma had given him for a birthday present,—they had so many circles to draw that Mamma taught Johnnie how to do them—and drew two circles, each about an inch across.

"Put eleven dots in one. Just scatter them about anywhere. Now put two hundred dots in the other."

"My, what a lot for that little circle!"

"Now suppose that every dot is a grain of dust. Would you rather breathe air with eleven grains of dust in it or air with two hundred grains in it?"

"I guess the two hundred grains would choke us,—don't you, Mamma?"

"That depends. Will you close the blinds of that front window, where the sun shines so bright?"

When the blinds were closed, mamma hung a dark cloth over the window, and cut a little hole in it right over a crack in the shutters, so that the bright sunlight came through in a long pencil of light. Then Johnnie saw myriads of little dust particles, so small that he had not known they were there until the strong sun lighted them up.

"You see, Johnnie, the mud and dirt brought into the house are ground up fine by our feet, and then set moving about in the air by the movements of the people and the drafts through the room. The more mud is brought in, the more dust for us to breathe. Now that you know what mud is made of, you can see that it is not very good stuff to take into our lungs."

"O, Mamma! you won't have to tell me to wipe my feet any more. I'll do it every time, if I don't forget."

Just then Mamma took a little red notebook from her workbasket, and wrote something in it. Johnnie thought she wrote down his promise. Mamma did that sometimes, and had a queer way of letting Johnnie look over her notebook about the time when he had failed to keep his word. Today, however, she wrote: "Get a good microscope for Johnnie's Christmas present. If he forgets to wipe his feet, show the dangers of dust."

And that is the way Johnnie's mother helped her boy to remember to wipe his feet.—*The Sunday School Times.*

SPRING GREETING

(Translated from the German by Lanier)

"All faintly through my soul today
As from a bell that far away
Is tinkled by some frolic fay,
Floateth a lovely chiming,
Thou magic bell, to many a fell
And many a Winter-saddened dell
Thy tongue a tale of Spring doth tell,
Too passionate-sweet for rhyming.

Chime out, thou little song of Spring,
Float in the blue skies ravishing,
Thy song-of-life a joy doth bring
That's sweet, albeit fleeting.
Float on the Spring-winds e'en to my Home;
And when thou to a rose shalt come,
Say, I send her greeting."

THE CONNECTION BETWEEN TUBERCULOSIS AND ALCOHOLISM

DR. GEORGE LIEBE, WALDHOF, GERMANY

[Translated extracts (condensed and grouped) from an article on this subject in the "Alcohol-frag", 1907.]

THE International Tuberculosis Congress, which met in Paris in 1905, passed the following resolution:

"In view of the close connection between alcoholism and tuberculosis it is important to combat alcoholism as well as tuberculosis."

HOW ALCOHOL PREDISPOSES TO TUBERCULOSIS

1. *By lowering vitality.* The entrance of the tubercle bacillus into the lungs by way of the breath is usually looked upon as the direct cause of consumption. Since the germs are so widely disseminated, we all take them in on the breath. We do not think about it and we are not made ill by them. It must therefore be admitted that the tubercle cells alone do not make us ill. Something must be added that enables the bacillus to begin its destructive work. That something is what science calls "predisposition," that is, a weakness. If a body is sound it is so because all its smallest parts can perform their function; if it is sick, it is because these parts are not able to do their work.

Consumption is therefore dependent upon this predisposition, this weakening of the body, which consists of a loss of energy by the cells, loss of the power of resistance against the tuberculosis as well as against other injuries in general. It may be inherited, it may be developed in the body during life through injurious influences at a tender age, in school days, at the period of adolescence, or under the burden of gaining a living with its cares and anxieties.

To the causes which especially weaken the body and render it unable to withstand external attacks, alcohol without doubt, belongs. We can, in fact, trace the usual stages: first, it causes catarrh of the alimentary tract resulting in poor assimilation of food and with it a weakening of the bodily operations which can offer no actual protection against the lodgment of the germs.

2. *By hereditary influences or taint.* The habitual moderate user of alcohol not only creates in himself a predisposition to tuberculosis, or increases an existing one, . . . but he also extends the evil far beyond himself, for he often begets children whose inferiority and predisposition to consumption makes the hour they were laid in the cradle one of sorrowful remembrance for their parents. When such a defective [constitution] breaks down under a strain, as for example, in school, or in doing hard work, it is then too late for the parents to weep and wring their hands.

Thus, slowly but surely the degeneracy of a people strides on: alcoholism in the first generation, impaired lactation in the second, and tuberculosis in the third. That is a causal relation that should not be allowed to pass out of sight.

3. *By injurious effects upon the lungs.* Not only does the continued use of alcohol reduce the resisting power of the body, so that the chronic disorders of digestion and allied troubles of the liver, kidneys, heart, brain, nerves, etc., increase the general disposition to disease; not only do the children of alcoholic parents evidently inherit from them a general inferiority; but the lung tissues and



"One thing, for aye, endures alway
God's love, that gave the Easter Day."

their power of resistance is often directly affected so that the bacilli of tuberculosis easily find a lodgment.

4. *By increased contagion in bad company.* The use of alcohol, especially its frequent repetition, does not usually take place when a man is alone. He seeks the company of the like-minded which he finds in saloons, close rooms under unhygienic conditions as to light, air, and dust. Far better would it be for the body and its ability to withstand disease if the hour thus spent had been passed in the fresh air.

In such gatherings are occasionally persons suffering from lung disease who are careless about spreading contagion. Not seldom the liquor seller himself and his employees are thus affected. The mental faculties suffer from chronic alcoholism, the sense of order and cleanliness of the person in clothing, personal appearance and conduct, as well as the relations to home and family, are diminished. In these ways the use of alcohol makes itself felt indirectly through disregard of the simple rules of caution which are necessary because of the wide dissemination of the tubercle germ through human intercourse.

5. *As a factor in bad housing and feeding.* The outlay for alcoholic drinks often greatly diminishes incomes that are at best insufficient and the deduction comes largely from the table expenses.

Unfortunately, alcohol is yet looked upon by many as a food and relish. . . . It can not be too strongly emphasized that it is neither a food- nor a relish; that when used to strengthen and warm the body it only deceives. A widespread knowledge of this fact would remove one source of tuberculosis by the removal of alcohol.

Often alcohol causes catarrh of the stomach. Every specialist in tuberculosis will agree with Bernheim that "The first thing to be done in the alimentary cure of tuberculosis is not so much to have the patient eat more as it is to have him use well what he eats."

Wherever there is a tendency to hemorrhage, no alcohol should be given. But no one can foretell what patient has such a tendency, and the first hemorrhage may be fatal. Hence to allow a lung patient to use alcoholic liquors is to defy destiny. Furthermore, whoever examines the larynx of a patient and finds that it is attacked, must sound the warning: "The worst things for the throat are tobacco and alcohol."

Dr. Knopf says in an article on the treatment of tuberculosis patients in institutions:

"In the sanitarium, the use of liquor, wine, and beer, unless specially ordered by the physician, is absolutely forbidden, and the sanitarium therefore acts in a way as a factor in opposing this social evil, the scourge of many civilized nations. The belief that spirituous drinks, particularly whisky, are a protective against tuberculosis, or a desirable remedy for it, is nothing but a popular fancy.

A Wurtemberg colleague said not long ago: "According to my experience, I must call it a crime for a physician to order alcoholic drinks for a patient with any kind of lung disease, and particularly for a consumptive,

for it increases deficiency of oxygen and excess of carbon dioxide, and besides causes other well-known injuries."

Dr. Gabrilowitsch says that at the Sanitarium Hilila he has found the results of treating tuberculosis without alcohol to be: (1) a better appetite; (2) a quick gain in body weight; (3) fever less frequent, etc.

THE PHYSICIAN'S PART IN PREVENTION

Writing of the terrible enemy, tuberculosis, Leuzmann says:

"The physician who has daily and hourly before his eyes the moral and physical miseries caused by the use of alcoholic drinks must . . . preach to his fellow-men that alcohol (the so-called care-breaker), exerts a weakening influence upon the health and diminishes the power of resistance against every disease, particularly against tuberculosis."

ALCOHOL NEITHER A PREVENTIVE NOR A REMEDY

In tuberculosis, the oxygenation process is lowered, because parts of the lungs do not do their work. Besides, in severe cases, assimilation by the tissues is below normal because the alkaline quality of the tissue fluids is diminished. It is essential to avoid in treatment all those factors which cause a further lowering of the oxidation process. Since alcohol diminishes oxidation in the body, its use, if not contra indicated, is at least to be reduced to the minimum.

In proof of the effect of alcohol in diminishing oxidation are the researches of Profs. Symenowsky and Schumoff, who conducted their experiments according to the methods of Profs. Neusky and Sieber. They explained the diminution in part by the direct inhibition [checking] of the activities of the protoplasm, and in part by the use of the oxygen by the alcohol for its own oxidation.

❖
"What is the meaning of '*alter ego*'?" asked the teacher of the beginners' class in Latin.

"The Other I," said the boy with the curly hair.

"Give a sentence containing the phrase."

"He winked his other I."

❖
Small Elmer had just come in from the back yard where the cook was removing the feathers from a chicken.

"Where is Jane, Elmer?" asked his grandmother.

"She's out behind the shed husking a hen," answered the little fellow."—*Chicago News*.

School Physiology Journal

Single Subscription.\$0.60 a year

CLUB RATES

Clubs from 5 to 50.\$0.50 each
Clubs of 50 and over.40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"April is here:

Blithest of seasons of all the year.
Gladness is born of the April weather,
And the heart is as light as a wind-tossed feather."

A COMPREHENSIVE STUDY OF THE CITY

AMONG the cities that are fast stretching to the stature of municipal giants, Pittsburgh is an acknowledged leader. As a centre of great manufacturing enterprises, it presents on a large scale conditions which might be many times duplicated in smaller communities, the study of which will undoubtedly throw much light on general social conditions. For these reasons, the "survey" of Pittsburgh undertaken by the publication committee of *Charities and Commons*, is of special interest. A preliminary report on the housing problem already reveals the fact that fully one-tenth of the 600,000 inhabitants of greater Pittsburgh live under unhealthful conditions as to inadequate and impure water supply, primitive sanitary arrangements, over-crowding and deficient ventilation. "Working years are reduced, efficiency impaired, because of the conditions which make so surely for disease and under-vitalization." It is hoped to carry the work of investigation and conclusions to the point where "local initiative can be hopefully challenged to shoulder the responsibilities which the facts show to be obvious."

It is to be regretted that the elaborate outline for the survey, as published at least, contains no indication of any purpose to inquire as thoroughly into the inter-relation of drink with the problems of charities, child-labor, employment of women, criminality, disease, industrial accidents, etc. It is true that researches in this question are being conducted in other great cities, but we incline to the belief that such a study in connection with the general survey in Pittsburgh would yield facts that would make individual and local responsibility in this matter, in Pittsburgh and elsewhere, too obvious to be ignored.

THE EFFECTIVE KIND OF KNOWLEDGE

THIS is pre-eminently the day of the fact, a truth once tersely expressed by Jacob Riis in the words, "If you want to succeed in a reform, give the people the facts." Mulberry Bend is his witness. It makes little difference how deeply entrenched the wrong. It is certain, in the very nature of things, to fall eventually before the irresistible power of the fact.

We sometimes hear it said, and particularly of the public school temperance teaching, that knowledge of evil does not prevent its practice. No candid mind will deny that knowledge does not always prevent evil, but the human mind is so constituted that it is open to conviction by fact, and in the main to act upon it, else why have any education at all. The truth is, there is considerable difference between knowledge of evil and knowledge of the causes underlying that evil. Pittsburgh, for example, has long known that it is afflicted with typhoid fever. Investigators are showing that this is largely due to preventable unhygienic conditions, what those conditions are, where they exist, and what can be done to overcome them. The annual report of the Michigan State Board of Health shows that there has been a decrease in the ratio of infectious diseases in that state practically contemporaneously with the vigorous campaign of education by the Board for the enlightenment of the public as to the danger, method of spread, and means of preventing these diseases. This is the kind of knowledge that in the long run tends to overcome an evil.

Mankind from the days of Noah has had knowledge of the evils of drunkenness. Now we are getting hold of the chain of causal facts,—the effect of alcohol on cell and brain and nerve, on efficiency and inheritance. These are the facts, universal knowledge of which is certain in the end to influence action toward sobriety as a method of self-preservation, as the reasonable, sensible preventive of the personal and the social evils of alcoholism.

PREVENTIVE PENOLOGY

AN address by Ex-Governor Stokes of New Jersey at the Seventh New Jersey Conference of Charities and Corrections reviewed the existing pressure upon state penal, reformatory and medical institutions and declared:

"Prevention is our salvation, and this can only come by a scientific understanding of the cause of crime and of the adding to the number of defectives in our state. Isn't it important to prevent the increase of moral and physical defectives?"

It surely is important, and some of the causes are not hard to find. Ex-Governor Stokes is quoted as saying that the state prison already contains 1275 inmates against its capacity for 1250, with no room for women. The report of the Committee of Fifty showed that in 1899, 25.38 per cent. of the inmates of this prison were there solely as a result of intemperance and that in only 31.4 per cent. of the cases, less than one-third, could intemperance be excluded as one of the causal factors. If the same percentage obtains now, if only the cases in which drink was the sole cause could be excluded, the inmates of the state prison, so far from over-crowding it, would fall below the present capacity by 399.

The New Jersey Epileptic Village and the tuberculosis sanitarium, Ex-Governor Stokes said, had nearly reached the limits of their capacity. W. C. Sullivan, M. D., of England, in an investigation of the health of 219 children found that 4.1 per cent. of the children of alcoholic mothers became epileptic, whereas, in general, the frequency of epilepsy averages below one-half of one per cent. Alcoholism in the parents is now considered one of the most potent causes of epilepsy in the children.

The relation between alcohol and tuberculosis has become so marked by scientific observers that the International Congress on Tuberculosis in 1905 passed the following resolution:

"In view of the close connection between alcoholism and tuberculosis, this Congress strongly emphasizes the importance of combining the fight against tuberculosis with the struggle against alcoholism."

The state most certainly must care for the physical, mental and moral defectives now on its hands, but in so far as they are the result of alcohol, their condition is already known to be as preventable as yellow fever or small-pox. Turn on the light of truth about the nature and effects of alcoholic drinks, through the public schools, the public press, the printed page, remove temptation to drink as far as possible, and some of these pressing social problems will largely settle themselves.

"We are regularly receiving the SCHOOL PHYSIOLOGY JOURNAL at this office and very much appreciate the same."—Office of the Michigan Board of Health.

"I have read your JOURNAL with pleasure and profit. It is just what many teachers need to supplement the text and I assure you it will be a pleasure to recommend it to my teachers." E. C. Co. Supt. of Schools, Nebraska.

MARY HANCHETT HUNT

July 4, 1830.

April 24, 1906.

"Each deed thou has done dies, revives,
Goes to work in the world; until each ray of thy
will,
Every flash of thy passion and prowess, long over,
shall thrill
The whole people, the countless, with ardor, till
they, too, give forth
A like cheer to their sons, who, in turn fill the
South and the North
With the radiance thy deed was the germ of."



ANSWERING OUR OWN PRAYERS FOR NO-SALOON

IF we are able to recognize God's answer to our prayers for no-saloons our eyes will be opened to see the following facts:

First, that under our government of the people only the ballots of a majority of the voters can close the American saloon.

Second, that temperance teaching which does not reach the majority will educate a minority, but at the ballot box that minority will be helplessly voted down by the unreached majority.

Third, that if we want the saloon closed we must teach the majority, the law-making power, that alcohol is by nature an outlaw which should be banished from human habits and traffic.

Fourth, that compulsory scientific temperance instruction in the public schools is the one God-given method of temperance teaching that reaches the coming majorities.

Fifth, that if we are engaged in every other good work, but are neglecting scientific temperance instruction in the public schools we are not preventing the continuation of present conditions, namely, a temperance minority helpless before an opposing saloon majority.—*M. H. Hunt.*



EDUCATIONAL forces are behind prohibition: an army of 20,000 teachers [in the South] have been commissioned to teach the liquor traffic is an enemy to the personal and public welfare. *The introduction of textbooks on physiology into the schools was the inauguration of the prohibition propaganda.** To the thousands of public schoolteachers consecrated to truth and consistency, prohibition is moral and mental freedom. It ends for them a compromised relation to the public good which was revolting to many a sensitive conscience."—Mr. John E. White in *Southern Workman* (March) quoted by *April Review of Reviews*. [**Italics ours.*]

Grammar
Lesson

SIXTH YEAR

RESPIRATION

BEGIN the lesson by asking what is the most important food.* Replies will probably include milk, meat and the like; state that while all these are important, still you could live many days without them while one deprived of that which you have in mind would die in a few minutes. Doubtless it will then occur to some child that you are speaking of the air.

What part of the air is necessary to life, and why? Perform the following experiments before the class. Provide a large glass jar (a fruit jar will do) a short candle and a card large enough to cover the mouth of the jar. Light the candle and permit it to burn for a minute or two to show that combustion takes place readily in common air. Set the candle still burning on the table near the edge and invert the glass jar over it. The flame slowly smothers and goes out.

1. *Oxygen necessary to oxidation or combustion.*

Question the class as to the reasons for this, bringing out the points (1) that the candle burned freely in ordinary air such as they are breathing, and at first when covered by the jar, but (2) presently went out, proving that some change in the air must have taken place or the candle would have continued to burn. Will the candle burn again without changing the air in the jar? Let us see. Slide the jar to the edge of the table and let the candle drop out. Light it and slip it up into the jar again, the jar being held with its mouth a little over the edge of the table to receive the candle. The flame goes out at once. What does this show? Take up the jar and wave it to and fro a few times so as to change the air. Upon trying the candle inside the jar we find it again burns with a bright flame. Lead the children to see that in order to con-

tinue to burn, the candle must have a constant supply of fresh air. What part of the air is needed? If books do not state, explain that a gas called oxygen is the part needed.

2. *Carbon dioxide, a product of combustion, hinders oxidation.*

Now pour some clear lime-water into the jar and ask the class to note the immediate change in its appearance. What does this milky appearance show? If no one knows, explain that it is caused by the presence of a new gas, carbon dioxide, formed by the union of the air with the carbon of the candle. The oxygen of the air in the bottle is used up in forming the carbon dioxide so the candle does not burn. What gas smothers fire? What one is necessary in order that a fire can burn? Emphasize this point by referring to the fact that the wider open the drafts of a stove are, *i. e.* the more air and hence, oxygen, there is, the faster the fire burns; close the stove tightly and the fire smoulders or goes out as the candle did.

3. *Heat and power in the body and outside, due to oxidation.*

Explain simply that when oxygen unites with other gases, or with food or other material particles a burning we call oxidation takes place. What do we get from the oxidation of the tallow of the candle? Of the wood in the stove? The coal in the engine? What remains after the wood or coal is or oxidized? Bring out the points that we usually get heat or power from oxidation and may also get light. From the fire ashes are left.

Ask the children to feel the flesh under their collars. What is the feeling? of all parts of the body? What does that heat show? When the oxidation takes place in the engine what do we get besides heat? What work do we get from the body when oxidation takes place there? Probably the class will think only of the work accomplished by muscular movements but they should be led to see that the work of the brain in mental operations, the stomach in digestion, the heart in circulation, the growth and repair of the body, everything done in the body depends upon the union of oxygen with the particles of food—oxidation. When they understand that nothing can be done even in the remotest cell of the body without oxygen they will see how important it is that there should be a full supply of this life-giving gas. When oxidation occurred in the candle what gas was formed? Is this gas always formed when oxidation takes place? If so should we expect it would also be formed in the body?

*Flint, *Human Physiology*, p. 169, includes air as well as water in the list of "accessory aliments," because it contributes to nutrition.

4. *Oxidation in the body depends upon proper removal of carbon-dioxide and wastes.*

Refer to the experiment showing that as soon as the oxygen was used up and the carbon dioxide formed, the burning of the candle could not go on, and proceed to show by the next experiment that it is equally necessary to get rid of the carbon dioxide and the "ashes" formed in the body by oxidation.

Is carbon dioxide formed by oxidation in the body? Let us see. Test the air in the jar by trying it for an instant with the lighted candle and cover the mouth of the jar with the card. Pass a straw, glass tube or one made of stiff paper, through a hole in the card just large enough to receive it. Now breathe several times into the bottle through the tube drawing air from the jar, back into the lungs each time. Place the jar on the table as before and removing the card, move the jar to the edge of the table and pass the lighted candle up into it, note that the flame goes out just as it did in the first experiment. What does that prove? Breathe through a tube into a glass of clear lime water, this result is also like that obtained in the first experiment. What does the milky appearance prove?

To show that human life as well as the candle flame would be smothered by an excess of carbon dioxide ask some pupil to look up the story of the Black Hole in Calcutta and relate it to the class. Speak also of old wells and unventilated mines where choke damp has often caused loss of life. Warn against going into old wells or caves without testing the air with a bundle of burning hay or a lighted candle. Why are these good tests?

Probably every child has followed these experiments closely and understands what they are meant to show but it will be well to call for concise statements which should be written upon the board.

ORGANS OF BREATHING

Having shown that oxidation in the body and, hence work and even life itself depends upon a supply of oxygen to each cell, and, that the carbon dioxide and waste resulting from that oxidation can cause the process of oxidation to cease and thus destroy life, proceed to discuss the beautiful and intricate mechanism by which the oxygen is supplied and the wastes removed.

How do we get oxygen into the body and the carbon dioxide and waste out? By what means are these wastes brought into contact with the air and replaced by oxygen? Where does this change take place?

How many times a minute do we need to

change the air by breathing? Let the members of the class stand and placing their hands on their sides, thumbs back, count for themselves the number of breaths in a minute. How does this number vary when at rest? After running? Let them next place their hands on their chests, and inspire and expire slowly. Repeat with hands at sides and covering the floating ribs. What are the movements of the chest-walls when we inspire air into the lungs? When we expire it? If a bellows is available pull the handles apart slowly and let the class note how the air rushes in. Close them and the air is forced out. Explain, if the book does not (it is always understood that the teacher requires pupils to find out for themselves all they can from their textbooks and other available sources) that although we say as "light as air," meaning no appreciable weight, the air does have weight and presses downward into every vacant space such as the lung cavity and the open bellows.

See that the children understand that respiration is performed in much the same way as the air passes into the bellows and is then forced out. What part of the chest walls corresponds to the hands which open and close the bellows? What big muscle is particularly important? Let pupils describe the different air passages and the lungs and tell how each tiny lung cell is surrounded by a film of blood. What parts of the blood bring wastes and carry oxygen? What color is the blood which comes to the lung cells from the right heart? Why? How does it look when it goes away again?

HYGIENE OF BREATHING

Again refer to the candle which went out when there was insufficient oxygen. If it went out when the oxygen was all gone in what condition was the light when it had only half enough oxygen? How much heat compared to the whole capacity of the stove can be obtained when drafts are closed and the fire has only half enough air? How about the work an engine could do where it was poorly supplied with air? A physician writing for the *New York Medical Journal* not long ago, said that people on an average do not breathe one-half enough oxygen to meet the needs of the body. Bearing in mind the results of lack of air in the stove and engine, what must we think of the heat and work the body can produce with only half the needed air?

If people feel languid or "lazy" and have "the blues" what may be the reason? Emphasize the fact that only half enough oxygen probably means only half enough vitality

in the body. How many in the class would be contented to live half a life? How many wish to have buoyant health and a happy disposition? All we are sure. What can we do to achieve it? Encourage the children to express themselves freely on this point guiding their thought to the means by which full, deep breathing and perfect oxygenation of the blood can be secured.

Ask them to breathe just as they usually do and then as deeply as possible and note how much larger the whole chest is in the latter case. Every little cell was then at work, why let part of them be idle most of the time? Why not make them do their duty all the time? Which boy has the strongest muscles? The boy who trains and exercises them most, of course.

What boy can run the farthest and has the best "wind"? The boy who has the best chest capacity and who breathes the most fresh air. Oxygen makes red cheeks and splendid vigor. The lungs can be trained to do more work as well as the muscles. Running, jumping, hill-climbing and the like expand the chest and help deep breathing. Why?

Teach some simple breathing exercises (on p. 128 are some excellent ones) and encourage all to practice them, keeping records of the gain in chest capacity. Ask them to press in their sides firmly with their hands and try to take a deep breath. What effect would tight clothing have on deep breathing?

Probably some of the people in the "Black Hole" breathed deeply, yet they died. How do you explain that? Yes, it is even more necessary that we breathe pure air than that we breath deeply. Why do people in church often get sleepy? Why can children study better after recess? At this point discuss ventilation, a subject which is fully treated in most text-books.

Emphasize the need of nasal breathing and bring up any other points of hygiene which seem necessary or desirable in the present class.

HINDRANCES TO PROPER BREATHING

Suppose you try to stay for some time in a room full of smoke. Why does it make your throat and lungs smart and choke you up? If they do not see the point refer to the very delicate membranes lining the bronchial tubes and composing the air cells and suggest how easily they may be irritated. Hold a piece of oiled paper over the lighted candle and show how the smoke soon collects and discolors the paper. When a boy smokes cigars and inhales the smoke what must we

suppose happens in the moist pipes and cells of his lungs? If the delicate membranes are choked with soot what effect would that have on the interchange of oxygen and carbon dioxide? What poison does tobacco contain? Explain if books do not that nicotine readily vaporizes when it is burned. What would be the effect on the blood of drawing such a poisonous vapor into the lungs where it could so easily pass directly through the thin membranes into the blood? What may be the reason the cigaret fiend has a white face, poor blood, a weak heart and short "wind"? See that the class understand that smoking a pipe



"You are a soul, a human soul
Shakespeare no greater, O you slip of God."

is also bad for the lungs and that breathing tobacco smoke is injurious to others as well as to the smoker. See that all have a clear impression of the fact that smoking irritates the membranes of the throat and lungs, substitutes irritating smoke for the vitalizing oxygen and introduces the poisonous vapors from the tobacco directly into the blood.

Who can mention another enemy to the lungs and to a full supply of oxygen for the body? Find out from your books what are the effects of alcoholic drinks on bronchial tubes and the lung tissues. How does the use of these drinks affect the supply of oxygen in the body? If the books do not touch upon

this point explain that for every ounce of alcohol, two ounces of oxygen are required to oxidize it, so the more a man drinks the more his body is robbed of the necessary oxygen. Alcohol is a great oxygen robber.

Emphasize the points that alcohol lessens the power of the red blood corpuscles to take oxygen from the air cells of the lungs and carry it to the tissues of the body, has a tendency to cause congestion of the membranes of the throat and lungs, and by diverting oxygen from the needy tissues lowers the vitality of the body.

NOTE.—The Prize Essay Tuberculosis as a Disease of the Masses and How to Combat it by S. A. Knopf, M. D., (Fred P. Flori, 16 West 95th St., N. Y. Price \$.25) a pamphlet of 104 pages is so complete and valuable that every school should own and use a copy.

Procure from Sec'y of State Board of Health, Brattleboro, Vt., copies of the leaflet, "Consumption, Its Cause, Prevention and Cure," these to be used as a text to this topic.

Tuberculosis.—If taking up this part of the subject avoid morbid details as far as possible.

Teach in the beginning that those who get plenty of sleep, wholesome food, exercise and fresh air, breathe deeply and avoid the use of narcotics, seldom or never suffer from consumption; that it is not inherited and is a very preventable and a very curable disease.

Explain simply that it comes from tubercle germs, and how they work in the body; how they are disseminated and destroyed. Show how they lurk in damp, dark, unventilated rooms and emphasize the points made in the article page 121.

Warn against dry sweeping and dusting, expectorating, putting the fingers in the nose or mouth, kissing on the mouth, drinking from public cups, etc.

Speak of the ease with which a destructive fire may be extinguished if only it be discovered when it has just begun, and impress the class with the fact that similarly many fatal cases of tuberculosis might easily have been cured when in the incipient stage. Consequently if life is to be saved, a diagnosis must be made early. A persistent cough or constant "tired feeling," an unusual falling off in weight, or a fever in the afternoon, should be looked after promptly by a competent physician, especially if there is reason to believe that the person may have become infected with tuberculosis. If no disease is present, anxiety will be removed; if consumption has started, there is no time to lose.

While it is, of course, understood that the doctor must take charge of every case, it will be well to speak briefly of the sanitary means of relief, such as living in the open air, rest, feeding, and keeping up the courage; and of

the danger of self-drugging with proprietary medicines or alcoholic liquors.

Pneumonia.—Show that this disease is one of the most fatal and one which often precedes tuberculosis; that all cases originate from germs which are taken in with the breath or from infected dishes, etc. Warn against dust and teach preventive and restrictive measures including the avoidance of alcohol which lowers vitality and the bactericidal power of the blood.

DEVELOPMENT OF THE LUNGS

BY FREDERIC MARTIN, B. S.

Physical training with the Japanese is built upon proper and deep respiration as its fundamental factor. It is remarkable to see the devotion they give to deep breathing.

Thought the basis of strength.—Enter your physical exercises or cause the children you are teaching to go through their work, with the one paramount idea that infinite strength is really in us and has only to be brought out. Every time you inhale a deep breath and the very fibres in your chest seem to expand, smile to yourself and say, "I am full of muscular power and I must show it." This auto-suggestion is remarkably helpful. Every muscle twitches and seems to respond to its stimulating effect on the nerves. As a nervous wreck means physical collapse, so the toning of the nerves sends renewed vigor through the muscles. Make the mind strong and resolutely determine that the body is merely in need of exercise to develop its strength, and the physical effects are sure to follow.

Method of conducting breathing exercises. The children do not appreciate the philosophical side [of the auto-suggestion] at all, but the material, practical part of it arouses their interest and their delight. When you tell them to inhale, smiling and saying to themselves, "I am full of muscular power and I must show it"—you will be dumb-founded by the earnest way in which their little muscles will quiver with emotion.

Before beginning breathing exercises provide thorough ventilation and always combine deep breathing with muscular movements. Do not accentuate the breathing too much before the regular body exercises, but rather on an occasional rest or pause between them and especially at their close. All exercise must be done simultaneously by the class. I have found it more rhythmic to count up from one to eight, then reverse (on the same movement) from eight to one. This really gives sixteen counts to one movement—but the number is not apparent to the children.

When breathing, always have the children inhale slowly, very slowly, through the nose, with the mouth closed. "Inhale through the nose slowly, exhale through the mouth forcibly," should be the instruction to pupils. If the surroundings will permit, allow the children to shout "Ah!" as they exhale. This thoroughly drives the carbonated air from the lungs.

Below are four methods of breathing which I have found beneficial, effective and interesting to children, namely:

Breathing and raising arms sideways.—This method is the simplest effectual movement, and should be used after the regular muscular exercises. It consists of slowly raising the arms sideways until level with the shoulder while inhaling, then forcibly lowering them when exhaling, thus assisting to drive the impure air out of the lungs. To prevent haste there should be two counts when raising the arms, one when lowering them, and one for rest between breaths.

Breathing and rapping on the chest.—Before commencing the body movements in physical training have the children slowly inhale and at the same time gently rap the chest with the palms of their hands. This effectual method is commonly employed by vocal instructors in Europe when developing the lungs of their pupils. The gentle rap-

ping on the chest has the effect of jarring any dormant blood cells that may lie near the surface of the lungs and thus force the fresh air into them. It is an exercise much enjoyed by the children as it also strengthens their chest muscles.

Breathing while contracting the lungs.—At the count of one, the children's arms should be thrown directly forward and the lungs contracted or squeezed together as tightly as possible. Then count two and have them fill their lungs as full of air as they can while in that position. At the next count the shoulders and elbows should be forcibly thrown backward, as far as possible with the arms doubled, and the air still kept in the lungs. Then exhale forcibly at the fourth.

Breathing while bending the trunk.—A very effective and beneficial exercise is the bending of the trunk while breathing. It is best done to four counts. First inhale slowly, raising the arms sideways upwards until they almost meet above the head, at the same time filling the lungs entirely. Second, bend the trunk forward until the hands almost touch the floor, keeping the knees straight. Third, raise the trunk upwards to a vertical position. This will again bring the arms straight above the head. Finally, forcibly lower the arms sideways, exhaling the air in the lungs. —Normal Instructor.

The Latest Authoritative Books on the Alcohol Question

Alcohol and the Human Body

— BY —

Sir Victor Horsely, Hon. M. D., Prof. Pathology,
University College, London.

— AND —

Marv D. Sturge, M. D., Birmingham and
Midland Hospital for Women.

PARTIAL CONTENTS—Alcohol a Drug; Effect of Alcohol on Intellectual Processes; Degeneration and Disease of the Nervous System Due to Alcohol; Action of Alcohol on the Digestive System, Is Alcohol a Food; Effect of Alcohol Upon the Heart; on Power to Resist Disease; upon Children; upon the Race.

ABSORBINGLY INTERESTING

SCIENTIFIC AND UP-TO-DATE

INDISPENSIBLE TO EDUCATORS

370 Pages 16 Beautiful Plates 21 Diagrams

Price, \$1.50 Postage, \$.15

Alcohol and the Human Body,	\$1.65	} ONLY
or		
Psychology of Alch olism,	1.65	
Physiology Journal, one year,	.60	} \$1.80

Psychology of Alch olism

— BY —

GEO. B. CUTTEN, B. D., LL. A. Ph., D.,
(Yale)

A Summary of Research (750 references) covers whole ground of Effects of Alcohol on Nervous System, Intellect, Will, Emotions, Senses, Insanity and of Cures by Hypnotism and Conversion.

**Shows Clearly the Relation
Between the Use of Alcohol
and Mental States.**

357 PAGES

20 ILLUSTRATIONS

Price, \$1.50 Postage, \$.15

Alcohol and the Human Body,	\$1.65	} ONLY
Psychology of Alch olism,	1.65	
Physiology Journal, one year	.60	
		} \$3.00

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

OXFORDSHIRE MAY SONG

Allegretto.

Spring is com - ing, spring is com - ing,
cres.

1. Spring is com - ing, is com - ing, Bird - ies,
 2. Spring is com - ing, is com - ing, Flow'rs are
 3. Spring is com - ing, is com - ing, All a -

Spring is com - ing,

nest;
 too;
 fair;

build your nest, build your nest;
 com - ing too, com - ing too;
 round is fair, all is fair;

Weave to - geth - er, weave
 Pan - sies, lil - ies, and
 Shim - mer, quiv - er on

Weave to - geth - er, weave
 Pan - sies, lil - ies, and
 Shim - mer, quiv - er on

straw and feath - er, Do - ing each your best.
 daf - fo - dil - lies, Now are com - ing through.
 qui - et riv - er, Joy is ev - 'ry - where.

Har. Fourth Reader,

(Copyrighted by American Book Company. All rights reserved.)

Through the courtesy of the American Book Company, we are enabled to present the charming May Song given above. It is taken from the FOURTH READER of the HARMONIC MUSIC SERIES, the advertisement of which appears elsewhere.

TEACHER'S GROUPS.

Normal Instructor, . . .	\$.75	} OUR PRICE	\$1.00
School Physiology Journal, . .	.60		
Normal Instructor, . . .	\$.75	} OUR PRICE	\$1.65
Primary Plans, . . .	1.00		
School Physiology Journal, . .	.60		

CLASS A.

Success, . . .	\$1.00	Any 1 with JOURNAL \$1.15
Woman's Home Companion, . . .	1.00	
American (Leslie's), . . .	1.00	
Our Little Folks, (new) . . .	1.00	Any 2 with JOURNAL \$1.80
American Motherhood, . . .	1.00	
Primary Plans, . . .	1.00	Any 3 with JOURNAL \$2.50
American Boy, . . .	1.00	
Altruist, * . . .	1.00	

*Less 15c if this is chosen.

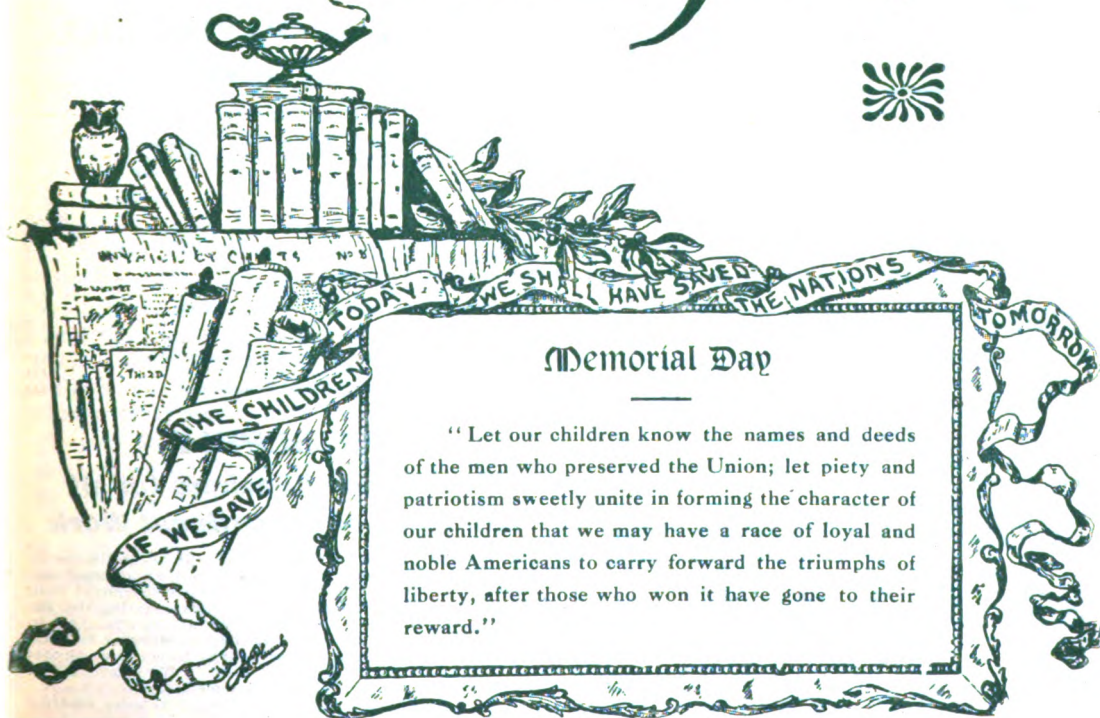
SCHOOL PHYSIOLOGY JOURNAL, 23 Trull Street, Boston, Mass.

Alcohol and the Nation



Boston Public Lib

THE SCHOOL PHYSIOLOGY JOURNAL



New Century Series

— OF —

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fullness and accuracy of the treatment in regard to the nature and effects of alcoholic drink and other narcotics on the human system.

Send for Descriptive Circular.

American Book Company

New York

Cincinnati

Chicago

"It hain't no use to grumble and complain;
It's jest as cheap and easy to rejoice,
When God sorts out the weather and sends rain,
W'y rain's my choice."

THE SUFFOLK ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

234 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

ARE YOU A Primary=Kindergarten Teacher?



That is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the ONLY HOUSE IN THE U. S. putting up Kindergarten material especially for Primary Schools. If you will send for free catalogue now we will send you of charge Instructions for using Kindergarten material in primary schools, the regular price being 25 cts. Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy.

\$4.00 per Dozen.

\$25.00 per 100.

Address

HENRY R. PATTENGILL

Lansing, Michigan.

CONTENTS.

	PAGE
Scientific Foundation of Temperance Instruction	128
The Cigaretist and His Cure	132
Getting Back of Surface Causes	133
Economic Aspects of the Drink Habit	134
Primary Lesson—First Year—Parts of the Body	135
Editorials	136
Grammar Lesson—Fourth Year—Cigaret Lesson	138
What the Scientific Temperance Federation is Doing	140
Commercial Fiction vs. Disinterested Facts	141
Alcohol the Destroyer of National Prosperity	143

WE SUPPLY

**High-Grade Teachers for all
Branches of Educational Work**

THOROUGH investigation of records of candidates insure best possible service to employers of teachers. Methods broader in scope and more successful than any teachers' agency. Offices in 12 cities covering the entire country enable us to supply men or opportunities in almost any locality desired. Special advantages to male teachers desiring promotion or willing to consider opportunities in business or technical work. We guarantee to every applicant active and aggressive efforts. List of positions open, free if you write us today, stating age, experience and salary desired.

HAPGOODS

The National Organization of Brain Brokers

SUITE 144, 305 BROADWAY, N. Y.

1 1215 COMMONWEALTH TRUST BLDG., PHILADELPHIA, PA.

1015 HARTFORD BLDG., CHICAGO, ILL.

(Other Offices in other cities.)

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVII

BOSTON, MAY, 1908

No. 9

Freedom

By Edwin Markham

Here in the forest now,
As on that old July
When first our fathers took the vow,
The bluebird, stained with earth and sky,
Shouts from a blowing bough
In green aerial freedom, wild and high,—
And now, as then, the bobolink,
Out on the uncertain brink
Of the swaying maple swings,
Loosing his song out, link by golden link;
While over the wood his proclamation rings,
A daring boast that would unkingdom kings!

Even so the wild bird sang on bough and wall
That day the Bell of Independence Hall
Thundered upon the world the Word of Man,
The word God uttered when the world began—
That day when Liberty began to be,
And mighty hopes were out on land and sea.

But Freedom calls her conscripts then as now:
It is an endless battle to be free.
As the old dangers lessen from the skies
New dangers rise:
Down the long centuries eternally,
Again, again, will rise Thermopylæ—
Again, again, a new Leonidas
Must hold for God the imperiled Pass.
As the long ages run
New Lexington will rise on Lexington;
And many a valorous Warren fall
Upon the imperiled wall.

Man is the conscript of an endless quest,
A long divine adventure without rest—
A holy war, a battle yet unwon
When he shall climb beyond the burnt-out sun.
Each hard-earned freedom withers to a bond:
Freedom forever is beyond—beyond!
—*The Independent.*



THE SCIENTIFIC FOUNDATION OF TEMPERANCE INSTRUCTION

BY JULIE KASSOWITZ, PH. D., VIENNA

NO one who is acquainted with the facts can doubt today that alcohol is one of the most widespread causes of idiocy, crime, poverty, and degeneracy, a social poison, whose destructive influence upon the community is counterbalanced by no advantages. But, in giving instruction in the schools we should not go into these social effects of alcohol, as they are much too complicated for the childish mind. We should deal only with the injury it does to the health of the individual.

The treatment of this subject is properly a part of the instruction in hygiene, and the more clearly we can explain to the children the way in which alcohol does its destructive work in the human body, and upon its individual organs, the more readily they will put confidence in our teaching. Hence it is not too much to say that the physiological explanation of the effects of alcohol is the proper foundation for temperance instruction.

Since it is our task to do all we can to uproot the popular misconceptions concerning the nourishing and strengthening properties of alcoholic drinks, it is of the greatest importance for the teacher to know whether he really has behind him the authority of science when he positively opposes these opinions.

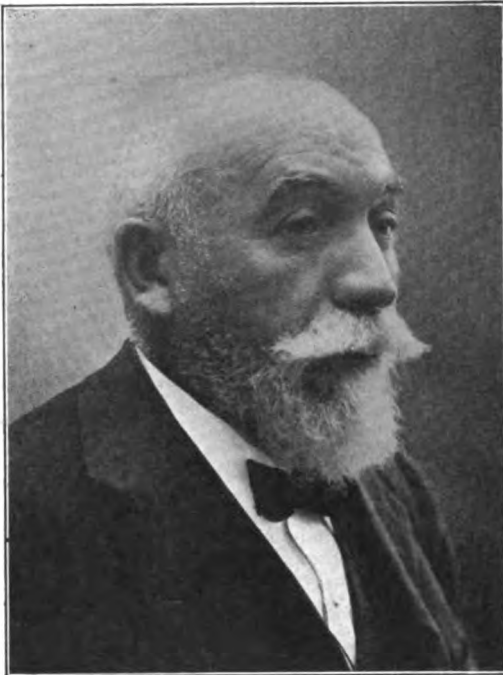
The question is, are we justified in saying

to the children that the nutritive value of alcohol is a fable, that the alcohol contained in beer, wine and brandy is never nourishing but only poisonous, that every drop of alcohol is a poison, to be strictly avoided?

On this point, unfortunately, differences of opinion yet prevail. It is unfortunate because these theoretical controversies cause endless confusion. Many physicians and physiologists hold themselves justified in calling alcohol a food on the ground of their definition and theory. This, of course, does not change in any way the social and hygienic injury done by alcohol; but it is, nevertheless, a fact that these definitions are a hindrance to the spread of the abstinence movement.

It is of the greatest importance that the teacher become fully informed in order to be able to transmit to the children the clearest and most direct explanations possible. The numerous, and in some cases very active opposers of the principle of abstinence let slip no opportunity to bring into the field against it even pretended science. For that reason a clear, logical explanation is indispensable to the combat against alcoholism, and particularly for temperance instruction.

This scientific dogma, which has so often held back the progress of knowledge, and the popular prejudices in favor of the use of al-



MAX KASSOWITZ, M. D..

Professor of Children's Diseases. University of Vienna

cohol are frequently united and put into the field in the name of science for the rescue of alcohol. It is this scientific dogma which, for a long time was the only prevailing teaching, and which even now is still heard in spite of the strongest attacks upon it from the most distinguished seats of physiological learning, that we will now closely examine and see how it agrees with the facts.

Limited space makes it necessary to present here only an abstract of Dr. Kassowitz's scholarly criticism of the theory that food is burned in the body in a manner similar to the burning of the fuel in an engine. The chief points of the criticism are the following.—Ed.

THE STEAM ENGINE THEORY

1. The steam engine theory is at best only an assumption. It is not proved that the food material is ever combined with oxygen directly in the fluids, while it is a fact of experience that the organism grows and increases its living material at the expense of food.

2. It is not proved, nor even imagined, in what way, if at all, this energy derived from oxidation, can be converted in the living organism into muscle work.

3. In the steam engine, coal or other fuel is burned in a fireproof iron fire-box; but the living material is itself a substance so easily destroyed, that it seems unthinkable how such a process of oxidation could take place within it without the material itself being damaged. The machine has almost the same

chemical construction as the fuel material. To have a furnace built of albumen in which albumen is to be burnt would be like constructing of wood an engine to be heated with wood.

4. On the other hand, it is an undeniable fact that protoplasm because of its extreme instability can be readily broken down into its chemical constituents by various means, such as mechanical, chemical, electrical and thermal stimuli, and that as a result of the consequent changes, particularly in the muscles, external as well as internal mechanical work can be performed.

The steam engine theory is, therefore, less rational than the theory* which holds that all food material is first employed in building up the living material of the cells, and that only the breaking down of this complex chemical union, under the influence of normal, vital stimuli, yields the true supply of energy for the manifold activities of the body, and it is only these detached constituents of the cell which are united with the atmospheric oxygen. Food materials, accordingly, are only those whose chemical composition is such as to allow of their being employed in building up the living substance.

According to the steam engine theory, every substance which can be taken into the living organism and there be oxidized, is to be called food, although there is a large class of substances, such as glycerine, butyric acid, lactic acid, acetic acid, etc., which are oxidized in the body, but are not of the slightest food value, for, as is experimentally proved, they are not able to take the place of even the smallest part of food.

Alcohol belongs with these substances. Indeed, even such fearful poisons as morphia, ether, and chloroform are oxidized in the body, and must therefore, according to the steam engine theory, be called foods.

ANOTHER THEORY OF METABOLISM

According to the synthetic theory of metabolism, the characteristics of a food and of a poison, are entirely distinct, indeed directly opposite. For food materials are those which build up protoplasm; poisons those that are destructive to it. In fact, the chemical nature of poisons is such that they exert a strong power of attraction for certain constituents of the protoplasm, which is thereby broken down, and the living substance destroyed.

Alcohol displays this action upon the nerves

*See "Allgemeinen Biologie" by Prof. Max Kassowitz, Vienna, 1899.

and in the brain. It impairs the nerve protoplasm and thereby throws out of function whole nerve tracts and renders others super-sensitive to stimuli. The whole complicated apparatus of the sensory paths is thus brought into disorder.

The same protoplasm-destroying action gives rise to inflammatory processes in the mucous membrane of the stomach, in the liver and kidney cells, and to fatty degeneration of the muscular tissues of the heart.

That alcohol can, therefore, act as a food in helping to build up the protoplasm which it at the same time destroys, is a logically impossible supposition, as well as a direct contradiction of the facts, because no actual nourishing action of alcohol has yet been proved.

IMPORTANCE OF A PROPER DEFINITION OF FOOD IN TEMPERANCE INSTRUCTION

We must not suppose that this theoretical "hair-splitting" is of no importance in the practical struggle against alcoholism. The opposite certainly is the case. The more closely one follows the various phases of the battle, so much more the conviction grows that the results of the abstinence movement depend very much upon how well it succeeds in bringing scholars and laity to appreciate the inconsistency of the idea that one and the same material can act both as a food and as a poison.

It matters not that the conscientious among the defenders of the old teaching may always protest that the idea of food value which they hold is only theoretical, that although alcohol is a food substance it is a bad, unusable food. The alcohol interests make capital out of the food value fable and leave out the modifying clauses. The "verdict of science" that "alcohol is a food material" is so much the more energetically spread far and wide, and the "blood-building wine" and the "strengthening beer", find ready sale.

Furthermore, the round-about qualifying phrases are of no use in practical explanatory work, and particularly in the instruction of the young. Every lecturer and every teacher can testify that less can be accomplished with indefinite ambiguous assertions and long-winded provisos than with short pregnant formulas, such as are here at our disposal.....

An Austrian school inspector has said, "We always observe that a subject which is clear to us and over which we have exercised our own faculties is very differently grasped [by the pupils] from that which is foggy to us, and which we have not so well digested."

This is equally true of the anti-alcohol in-

struction. Of course the business of correctly defining food and poison, the steam engine theory, or the growth and decay of protoplasm, is one that belongs particularly to the physician and physiologist, and it could, like other scholastic disputes, be left to them to settle if it were not, in this case, bound up in the solution of such a pressing-ly practical question.

While on one side, the recognition of the truth in the question is hindered by deeply rooted prejudices, and by financial interests, the school on the other side has the high mission of spreading the correct conception of food and poison, even over the heads of belated physicians. Every teacher who sympathizes with this great work of abstinence instruction, can do this with the consciousness that his work concerns not only the health and elevation of his countrymen, but the triumph of truth over error.



DIFFERENT SECT

Three-year-old Albert was possessed of an unusually amiable disposition, so it was but natural that his mother should be greatly concerned when he awoke one morning in a cross and irritable mood.

"I know you are bilious, Albert," she said, "or you would not be so cross."

"It's not bilious, no such thing!" retorted Albert in an indignant tone. "You know very well, mamma, I's Mes'dist."—*Lippincott's Magazine*.



JULIE KASSOWITZ, Ph. D., Vienna

THE CIGARETTIST AND HIS CURE

E. H. ELLSWORTH

Principal County High School, Pratt, Kansas

THE immediate effects of cigaret smoking on boys are classable under three heads viz; mental, moral, and physical. The more remote effect in point of time in the life of the boy is the spiritual degeneration that follows the continued use of the cigaret when the victim has come to realize his slavery and willingly acquiesces in his own thralldom, making no effort to rouse himself or to assert his manhood against his enemy.

Recurring to the three classes of effects, it will suffice to say briefly that the first mental effect is to deaden the mind to stimuli of all kinds by teaching the nerves of the special senses and the finer sensibilities to lie to their erstwhile master. The second effect is that the mind becomes obtuse to all forms of truth and especially opponent to all efforts to make him see things in the right light. His *ego* is aroused before the will is capable of acting intelligibly, and he sets up his judgment as superior to that of any other person except it to be some one who has the peculiar fortune to hold some sort of hypnotic control over him. He no longer counts time "by heart-throbs" but by smokes.

The moral effect is allied to and grows out of the mental attitude that has been induced by the habit. Lying, cheating, profanity, evil desires of all kinds often become as virtues to his perverted imagination. He is ready to form all kinds of evil companionships and especially seems to think it proper to

"Pat his God on the head,
That men might call him brave."

Physically he is disreputable generally. Irregularities and eccentricities characterize his relations to his surroundings. He becomes untidy in habit. These are only symptoms of what is going on in the poor boy's digestive, nervous and excretory systems. The cigaret shortens a boy's breath, injures the delicate cells of the lungs, deteriorates the action of the heart, and impairs digestion.

One of the brightest and apparently most capable of the boys of an opposing school in a series of athletic contests, one whom I was especially anxious to see in the contests, told me on the Saturday morning prior to the "meet", that he had been ordered by the doctor to refrain from any part in the contests of the "meet" for fear of serious heart-failure. Instances could be multiplied, but one pointer will suffice for those who wish to see.

As to ways that have been found success-

ful in dealing with the cigarettist, there is no copyright or patent on anything good along this line; and, what is more the pity, there is no specific. If the victim of the cigaret can not be reached along the lines of his chivalry, or ambition, or personal pride, or the prospect of the future, he is pretty nearly a hopeless case. The ways in which those elements of character may be appealed to are various.

Among other things I would suggest that he engage in athletics as far as his condition warrants.

I would place responsibility on him in which smoking would render his performance of his duty difficult, or where the assigned tasks made smoking impossible. One boy was saved by being placed in a military school.

I would get him as far away from women as possible, first for their sakes, because he is an open insult to any good woman in his present condition and ought not to be allowed to pollute their atmosphere by his presence; and secondly, for his own sake, because they have failed already to have any hold on him or he would not be in this condition.

On the other hand, it is a distinct advantage for him to be associated with men who can help him. In our school we have organized a band and the writer has been learning to play an instrument for the sake of being with the boys.

As to criticism—so much depends on how and where the criticism is made. The mind of the boy needs to be aroused. I always assume that boys and girls out of order in any way are asleep with reference to the act they perform that disturbs the peace. The words I make most use of are, "Wake up."

Prohibition of cigaret smoking within legal bounds, occasional reference to the undesirability of the cigarettist as a companion, and such like influences by suggestion are worth while; but never nagging or pettiness of attitude. Plants are now known to grow erect by a process known as negative geotropism. Try it on the cigaret boy.

I doubt if any single movement has been fruitful of so much good as scientific temperance instruction in the schools. In presenting temperance hygiene I invariably let the subject of narcotics take its logical place as a part of the larger whole constituted by physiology, anatomy, and hygiene. I have always performed experiments, such as watering growing plants with a solution of nicotine, and the like. But in so doing, I was careful to explain the difference between conditions such as those which the laboratory offered and those in the human system.

Then having made the best possible presentation of the subject, I leave the class to work out the application for themselves, for I remember when a boy, saying to myself after some of my teachers had made the mistake of talking too much on a given topic, "O, if they would keep still and let me think it out to suit myself."

Fairness, hatred of undue advantage, abomination of cant, the "real article," all appeal to boys. Most boys are like Aggasiz, who, after a discussion with his class off the coast of Maine, when the subject had led up to the true idea of God, raised his eyes to heaven and said, "I do not want any one else to pray for me now." So boys, after seeing a successful experiment in the laboratory or having been skilfully questioned with reference to the subject of alcohol or tobacco like to be left alone.

And, finally, show real interest in the boy but let it be by deeds rather than by words. No amount of talk to show a boy that you are interested in him can offset the attending of pink teas while he is left to follow his own devices. If one can and will do the work that boys are worth, words become unnecessary. They are already *preached to death* and no one of them is ignorant of the *law* of life. I have made my greatest conquests by keeping still, letting the cigarettist talk until he was convicted out of his own mouth. In dealing with boys we can do no better than to use the methods of the Divine Teacher, *adapting them to the case in point*, and I say with all reverence that I attribute the measure of success which has crowned my efforts on this line to the fact that I have followed the methods of the Divine One as closely as possible.

READERS of the JOURNAL will find this number one of the most valuable that we have ever published in the wide range of facts which it presents, which are not only of vital interest in themselves, but afford good working material to all who desire to have at hand facts and references on the alcohol and narcotic questions. It will be especially helpful in school prize essays or orations, as much attention has been given to the preparation of matter suitable for such work. Additional copies for reference or distribution may be obtained if ordered soon.

NEW BEER LEAFLET—The fine article on beer which appears on pages 141-2 will soon be reprinted in attractive leaflet form and sold at reasonable rates.

GETTING BACK OF SURFACE CAUSES

BY E. L. TRANSEAU

A GERMAN physician has made a careful study of 138 weak-minded children in a special school for defectives*, for the purpose of ascertaining, if possible, the underlying cause or causes, of the defective condition.

The investigator reported that in only a few instances was he able to determine upon a single cause, such as an injury to the head. In most cases there are combined causes, and among them he mentions: mental and nervous disease; drunkenness, syphilis, tuberculosis on the part of the parents; injuries, severe mental or physical suffering of the mother during the pre-natal period, rheumatism, intestinal disorders during childhood, rachitis, severe contagious diseases, epilepsy, defective hearing or vision, bad environment, dirty dwellings, deficient nourishment, bad treatment, broken family ties.

That these children represented marked degeneracy of the family stock was shown by a much higher percentage of deaths among their brothers and sisters than was the case with children of comparative ages in the ordinary schools.

The investigator warned against placing undue emphasis upon alcoholism as a predominating cause of the defectiveness, because even in the 30 per cent. of cases where drunken parents were found, other factors entered which could be looked upon as causes, and he mentioned particularly, bad environment, lack of care and training, tuberculosis, infantile diseases, etc.

These are certainly unfavorable influences, says Dr. Hans Hunziker, in a review of the investigation, but we must not overlook the fact that a large proportion of these combined causes have their roots in alcoholism. It is so well known that it is almost trite to say that alcohol is first among the causes of the most dreadful environment, that every year it reduces families to beggary, houses them in crowded, dirty dwellings, breaks up family relations. We know today that the children of alcoholic parents are frequently epileptic, especially subject to convulsions and rheumatism in childhood, and that among them tuberculosis causes fearful havoc.

The artificial feeding, which is the chief cause of infantile digestive disorders, is usually due to the mother's inability to nurse her child, and Prof. Bunge has shown the close connection between alcoholism of the father and deficient lactation in the daughter.

(*Schlesinger, Archiv für Kinderheilkunde, Bd. 46.)

ECONOMIC ASPECTS OF THE DRINK HABIT

BY PROFESSOR JOHN MARSHALL BARKER, PH. D.

Professor of Sociology, Boston University

THE drink habit lessens physical efficiency. Physical manhood and brains have an economic value. Man as a productive agent can not work at his best without the free use of all his powers and faculties. The work of today requires not only a sustained power of endurance, but a quick, keen and alert judgment. These qualities are a prerequisite of the highest productive efficiency as well as of commercial success. Hence, they have a market value. The drink habit tends to limit a man's power of endurance, and to rob him of his capacity as a craftsman. Consequently, he cannot secure the position nor command the wages which otherwise would be his privilege.

2. *The young man who acquires the drink habit is discounted in the business world.* Employers of labor have found out that the man who undermines his health, deadens his sensibilities and dulls his brain by even small doses of alcohol will turn out less work than the non-drinking man, and the work will be inferior in quality. To do exact and precise work and to win the highest standard of business success, a man must have the free exercise of all his powers.

Sir Hiram Maxim once said: "The English workman spends a great part of his earnings in beer, tobacco and betting, he has no ambition—The American workman wishes to get on: he accomplishes a great deal more work in a day than any other workman in the world." More recently the Mosely Commission from Great Britain, in accounting for the industrial supremacy of the United States, gives prominence to the superiority of its artisans.

The great corporations, railroads, banks, and employers of labor generally, dare not trust their business to men who drink. The United States Department of Labor* found that ninety per cent. of railways, seventy-nine per cent. of manufactories, eight-eight per cent. of trades and seventy-two per cent. of agriculturalists discriminate against employees addicted to the use of intoxicants as a beverage. The American Railway Association has adopted standard rules, one of which is, "The use of intoxicants by employees when on duty is prohibited." The habitual use of intoxicants or the frequenting of places where they are sold is sufficient cause for the discharge of an employee. Nearly all the railroads forbid the use of liquor under any circumstances, and make it

a sufficient cause for discipline or discharge from service.

In recent years large business enterprises are following the economic rule as expressed by Marshall Field & Co. in these words: "We will not, to our knowledge, place a young man who drinks in our business, and, even though a man should apply for a position whose ability and other all-round qualifications would seem to fit him for the position, if we knew or discovered that he was a drinking man, we should decline to consider his application. Any man in our employ who acquired the habit of drink, even though moderately, is to a certain extent marked down in our estimation, and unless we can remove from him this serious fault, and show him his error, we feel compelled to do without his service." This statement is not based on sentiment, but on sound business principles. The employer who disregards these principles cannot hope for the largest measures of success. Business men who desire honest service do not select for important places of trust those who use strong drink. The strenuous demands of economy and good service help to enforce the rule of total abstinence. The foregoing facts teach the important lesson that the greatest barrier to the elevation of young men in business is the drink habit.

3. *Furthermore the drink habit destroys the spirit of enterprise.* In the light of scientific inquiry we have seen that the drink habit tends to undermine health, dissipate energy and shorten life. Reason and experience, following certain psychological laws, enable us to go further and affirm that the drink habit tends to weaken self-restraint as well as to the surrender of self-respect, high aims and worthy ambition in the race of life. These facts alone show that the drink habit unfits a man in this day of keen rivalry for the responsibilities of progressive business enterprises.

4. *Industrial success and social betterment demand total abstinence.* The economic consideration as to the effect of the drink habit in the way of impairing physical efficiency, shortening life, lessening the spirit of enterprise, and encouraging thriftlessness should lead young men to decide once for all that they will abstain rigidly from the use of intoxicants and thereby enhance their chances of success in the world's movement for industrial and social betterment.

(*Percentages based upon several thousand reports.)

Primary Lesson—Parts of the Body

FOR THE FIRST YEAR

IF a bird's nest is being built near the schoolhouse, lead the children quietly to watch the little workers day after day, observing the materials with which the nest is built, where they are found, how obtained and how used by the birds.

Lead the children to observe how the birds help one another. Do they strike at each other with claws or bills? Should not children be as wise and kind as the birds? Bring out the thought that children ought also to be mutually helpful to one another.

If it is impossible to watch the building of a nest, a last year's nest may be used to start the interest, leading the children to talk about the little carpenters that built it, the queer places birds choose for their homes, sometimes on the top of the ground, sometimes under our own roofs, sometimes in trees; the material they use for a foundation; for the houses themselves—not bricks and stones or lumber, but straws and thread and sometimes hair or sticks loosely laid in mud.

Place upon the chart or blackboard a good-sized picture of some handsome bird, and another full view of a boy (the parts of the body are better shown by the picture of a boy) and perhaps also of a girl.

Question the class as to what tools the birds used in building the nest, bringing out the different parts of the body that are employed. These parts should be written in the column headed by the picture of the bird, and should include the *body* to which the head, legs and wings are attached, the *head* containing the brain which tells what to do, and has the eyes, ears, nose and mouth (bill), the *wings*, and the *legs*. Let these take the form of simple sentences which can be read and copied as: The bird has a body; The bird has a head, etc. Adjectives might be added. Ask the children to name the things birds can do and develop the simplest uses of each of these main parts.

Now proceed to develop the main parts of the human body and write them in simple sentences underneath the picture of the child.

What parts have we that the birds have? We call the large part of our bodies the *trunk* because it is the main part. Several important organs like the stomach are packed away in it.

We should sit or stand erect so that we may have straight, beautiful bodies. How many of you think you stand and sit straighter than when you began school? Give simple exercises to encourage correct sitting and standing positions and take this occasion tactfully to correct any bad posture which may be becoming habitual.

In what ways are our *heads* like those of the birds? How different? What is the shape of our heads? What important parts of the head? We should always breathe through the nose and not through the mouth. (If circumstances require it, speak of the need of cleanliness of the face and teeth, and the care of the hair and give simple directions for keeping all neat.)

What parts of the body have the birds that we do not have? Have we that they have not? Our *arms* correspond to the wings of the birds. They need to fly, so God gave them wings. We need arms and hands in order to play and to do many kinds of work so He gave us what we needed. We call our arms the *upper limbs*.



What can you tell about your arms? How have your arms changed within the last year? What can you tell about your *hands*? What can you do with your hands that you could not last fall. What can you do more easily than you could then? What care should be taken of the hands? Of the nails? Why?

See that the children clearly understand, first, that really nice people make it a rule to keep the hands and nails scrupulously neat; and secondly, the need of cleanliness because we handle our food and it is unsafe to neglect them. Children even at this age can understand the simple reason why cleanliness is necessary and will attend to the matter much more cheerfully if the reasons are explained.

Mention some ways in which we can use our hands to make other people happy. If any child is in the habit of throwing stones or using the hands in other vicious ways, speak of the birds that use their claws only in proper, helpful ways.

In what ways are the bird's *feet* useful to them as ours are to us? How can they use theirs as we cannot? What can you tell about your feet? In what ways can we use them in the service of others? Since our feet are such good servants to us and to others we should take good care of them, and not pinch them with tight shoes. We call the legs and feet the *lower limbs*.

Bring out the things a strong, healthy boy or girl can do, and lead the children to see how nicely the parts of the body work together and make a perfect whole.

We must take good care of our bodies to keep them strong and well, and to make them grow. Here are the things that will help. We will write them. Make a list on the black-board such as good food, pure air, exercise, and sleep. Some other things hinder. Here they are. Make a second list of things which should be let alone if we would be sturdy, able to play and work and study well. This list should include rich food, tea and coffee, drinks with alcohol in them, tobacco or cigars. Which of these may do us the most harm? Why?

My body has a head, trunk, upper limbs, lower limbs.

I must give my body good care.

It needs pure air and water, good food, and exercise.

I can use my hands and feet to make others happy.

The boy and girl who wish to grow and to be well let alcoholic drinks and tobacco alone.

Cigarettes can harm us very much.

NOTE—The teacher will find the article by Miss

Arnold and the little poem suggestive and useful in connection with this lesson. Let the children make drawings of one hand by tracing around its outlines, and draw nests or birds, or cut them from paper.

NOTE—The Primary Lesson for last month was intended for the third, not the first year, as an error in print made it appear.

THE DIGNITY OF LABOR

BY SARAH L. ARNOLD

IN a room I visited, filled with beginners, the little people had been studying Miss Alcott's "Queen of My Tub, I Merrily Sing," and they wanted to tell me the story. were eager to add their comments. "She was a queen because she could do honest work and do it well." "She was helping somebody." "She said, 'Along the path of a useful life will heartease ever bloom.'" "That means you will be happy in your work, and you'll make other people happy if you work." "We all can help; I can wash dishes." "I can mind the baby." "I can bring in wood." "I can peddle papers." "I can run errands."

"She wished she could make her thought as white as her clothes. She liked to think about beautiful things when she worked." "We want hands that are able to work and to help, and thoughts that are good and true." "I chose that poem because I wanted the children to start with the right ideas about the dignity of labor," the teacher said. She had certainly helped them in the right direction and in the right spirit.—*Exchange*.

BABY'S SERVANTS

BERNICE V. ROGERS

TEN little servants the baby has,
To aid him in work or play—
Two little captains and eight little men,
Who are busy the whole long day.

The two little captains are short and plump,
The others are tall and slim;
Each wearing a cap like a little pink shell,
With a dainty, narrow, white rim.

Always moving and never at rest,
Save when baby takes his naps.
Can you tell me the names of these servants
ten,

With their little, pink, tiny caps?—*Selected*.

"I do love
My country's good with a respect more tender,
More holy and profound than mine own life."

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

MAY

"Over the pebbles the brown brooks flow,
Singing their cool songs, sweet and low.
From white-boled beech and elm top tall
On lilled shallows the deep shades fall.
In swaying cradle the white eggs rest
Safe and warm 'neath the brooding breast.
The sweetbrier lifts her winsome face,
The bramble weaves its lines of grace.
All joys are here, each dear delight,
And April's faith, in May, is sight."



SHALL TEMPERANCE INSTRUCTION BE SOCIAL?

WHENEVER any great phase of reform is at the forefront of public thought, care has to be exercised lest its catchwords be made loosely to cover the lack of clear thinking. Whatever may be the issue, it is important that we get at the fundamental principle and not gloss it over by applying to it a few popular terms which will catch the ear of the public and sound well.

With this caution in mind, it may be asked how far is it true, as has lately been asserted, that the school temperance instruction should be social rather than individualistic, because, as it is also asserted, the problem of the school is how to conserve the social good. What really are the truths that will, first, appeal to the *child's* interest and comprehension, and, secondly, give him that fundamental knowledge upon which in later life he can base his intelligent action as a member of society?

It is certain, first of all, that the truths presented must take the child where he is. Dr. Dudley A. Sargent of Harvard University said before the first Social Education Congress, "Boys and girls from ten to fourteen years of age want to know how to be strong, graceful and skilful, much more than they want any other knowledge."

Personal application of the instruction about alcoholic drinks and other narcotics,

whether the instruction be positive or negative appeals to this natural ambition of the pupils in elementary grades who constitute the vast majority of the pupils in our public schools, and for this reason is specially adapted to them.

Secondly, while work for the social good is one of the great ends of education, the welfare of society, after all, depends upon the welfare of its individual members.

The social, domestic, industrial and economic effects of alcoholic drinks are all a result of the physiological effects of those drinks. It is because alcohol impairs working ability and creates the uncontrollable physical craving for drink that society is burdened with the cost of poverty due to alcohol. It is because alcohol impairs the physique of the individual that it causes the degeneracy of the race. It is because alcohol impairs judgment, reason and self-control of the individual that it entails on home and society the moral and economic loss caused by drink. It is because alcohol impairs vital resistance, digestion and the respiratory system of the individual that he is warned against its use by those who are fighting tuberculosis, one great enemy of social health.

It is possible to teach the social effects of alcohol without giving the pupil any intelligent appreciation of his individual responsibility, but instruction as to the personal effects makes clear the reasons for the social and economic results. The study of the physiological effects cuts at the root of the alcohol problem. Instruction as to social and economic effects may do this, but there is a strong probability that it will only hack off a few top branches.

This is not saying that there is no place for social and economic teaching on this subject in the schools. No one who is acquainted with the facts will deny that alcohol deserves to be called a social poison the destructive influence of which upon the community is counterbalanced by no advantage. But pedagogy, science and logic all indicate that the physiological facts about alcoholic beverages (the effects on the individual) must continue to be the framework of the school instruction about these and kindred substances, especially in the elementary grades.



"O lookout, leaning from the mast,
What of the night? The shadows flee;
The stars grow pale; the storm is past;
A blood-red sunrise stains the sea.

"At length, at length, O dauntless wills,
O dreamers' heart that naught could tame,
Superb amid majestic hills
The domes of Eldorado flame!"

The Bad Cousins—Cigaret Lesson

For The Fourth Year

LESSON I

A FEW days before taking up this topic with your class, ask the children to find out all they can about the planting and growth of the potato. On the day of the lesson on cigarettes, ask the children what they can tell you about the growth and use of the potato. If they can not do this satisfactorily, the teacher may supply deficiencies.

WHAT GREW IN THE TWO FIELDS

Once there were two fields side by side. In one, plants were growing that were not very tall. They had small leaves and pretty white or purplish blossoms with yellow centers.

In the next field the plants were tall. They had large leaves and blossoms that were shaped like those in the first field, but of a lovely pink color. If you had seen the two fields, you would have said the one with the pink blossoms was the more beautiful to see.

One day men came to the first field, pulled up the plants, and found in the soil at their roots many brown things that had been growing all summer. They were of different sizes and shapes. Here is a picture of them. (Show a picture of potatoes.) What were they?

After they were gathered and put into barrels, they were carried away into many homes where they fed men, women and children. In a few homes there was nothing else to eat at times. Everywhere they went people were glad to see them.

The plants in the second field were gathered, and the large leaves were dried. Some were made into small brown rolls and packed into boxes labelled cigars, and others were pressed into evil smelling cakes or plugs.

The small leaves and pieces of leaves were coarsely ground and pressed into small tubes of white paper. These were put in boxes, and were labelled cigarettes. The cigars and cigarettes went into many homes, but they fed no one and made no one any better or healthier for their use. On the contrary, it sometimes happened that the money spent for the leaves of this plant was needed to buy good food or clothing for the family. Who can tell the names of the plants in the second field.

THE POTATO'S COUSIN

"I don't like to play with Ray Porter's cousin Blake at all," said Arthur Hewitt to his mother.

"Why, I thought Ray was your best friend,

I hope you have not quarreled with him."

"Oh, no, he's all right; but Blake's another sort. You can't play with him he cheats so. He gets all your marbles and keeps them. and he wants the best place in every game. Then he's always hitting little fellows and the girls, but he doesn't dare tackle a fellow of my size," said Arthur, swelling up as big as possible.

"What are we going to have for dinner?" he asked presently. "I'm 'most starved. Baked potatoes and cold chicken? Oh, goody. There isn't anything quite so good as a hot baked potato when you're real hungry; it goes right to the spot."

"I wish we could say as much for their cousins," said Mrs. Hewitt, with a twinkle in her eye.

"Why, Mother Hewitt, how can potatoes have any cousins? What do you mean?" asked Arthur.

"You would know that Ray and Blake were related because they look alike," said Mrs. Hewitt. "When you study about plants you will find that they, too, are alike in many ways, so we say they are related."

"But what about the potato's cousins?" asked Arthur eagerly. "Are they bad relations?"

"One of them is," said his mother. "It always cheats those who have anything to do with it, and it hurts big boys and men as well as little ones."

"My little brother, Mark, had been brought up on potatoes and meat, and was well and strong, but one day an older boy introduced him to the potato's cousin that I am telling you about. 'It'll make a man of you,' he said.

"But alas, it did just the opposite! When Mark was twenty years old he was not much taller than he was at fifteen. Instead of being a large, strong man like your father he was weak and sickly. He couldn't play ball because he had so little muscle. He couldn't walk or run fast because his heart was weak.

"His skin grew yellow and his teeth discolored although he brushed them often and tried to keep them white.

"In school he got behind his class, and he grew so nervous his hands trembled and he jumped whenever he heard a noise.

"He wished very much to get a place in a store, but when he went to ask for work, the merchants saw his stained fingers, and some of them told him they could get plenty of boys who did not smoke, and wouldn't have

any others. None of them wanted to hire him. He had a hard time to find any place at all to work.

"The worst of it all was that although he knew what was hurting his health and spoiling his chances for success in business, he had grown so fond of it that he couldn't let it alone. He didn't care whether he had enough to eat or not, but he always took care that he had enough cigarets to smoke."

"Oh, my!" said Arthur, "are cigarets cousins to my baked potatoes?"

"Yes, they are made from the tobacco plant which is like the potato in some ways, but they are very bad cousins and I hope my boy will never have anything to do with them."

Arthur looked very thoughtful for a moment, then suddenly he broke out:

"Ha, I know now what's the matter with Blake. He uses the potato's bad cousin and it has made a bad cousin of him. I shan't smoke cigarets, I'll eat potatoes."

Read or tell the stories of the two fields and of the potato's cousin, or use one or both as supplementary reading.

Question the children as to the difference between the potato and its cousin, the tobacco, bringing out the usefulness of the one and the uselessness of the other. Explain further that tobacco is not only useless but it is harmful as well because it contains something called nicotine which is very poisonous. When tobacco is first used, it generally makes the person sick. The body does all it can to show that it does not like the poison.

Why did not Arthur like to play with Ray's cousin Blake? How can we say that some plants are cousins to others? In what way was the potato's bad cousin like Blake?

Draw from the class, and if desirable, write upon the board the points of the story to be emphasized. Speak of the fact that Mark was deceived into thinking that cigaret smoking was harmless and also that the practice would make a man of him. In the next lesson treat these two points more fully as suggested. Ask the children to reproduce the story either orally or in writing. The latter method is better, and the reproduction may be made a part of language work if time is limited.

LESSON II

NOTE—After Lesson I is finished, write upon the board the topics for the next day's lesson, which will consist of the italicized questions presented below. Direct the children to copy them on papers sufficiently large to admit of writing the answers to each question. Ask the class to think about good answers to the questions and also to seek for others in their books and elsewhere. As this is probably the first year in which books are

used, the children may need some guidance as to how to proceed.

In taking up this lesson, review briefly the story of Mark and the way in which he was deceived, and then take up the questions in order, calling upon several, perhaps all, to read their answers. From these, select the best and most concise and have them written under the proper topics. It will be well, especially if the children's answers have not been very complete, to require that both questions and answers be copied in permanent notebooks where they can easily be reviewed later.

What really makes a boy manly? Lead the children to see that a manly boy should be strong physically, mentally and morally. He keeps his body strong and healthy (at least as far as conditions permit); he has a good, clear mind which he tries to improve; and he has a good character which means that he is pure in speech and action, truthful, fair and



"Ah! happy years! once more who would not be a boy!"

above-board in games and elsewhere; is honest and brave; and he has the self-control and courage to do what he knows is right even in the face of ridicule and temptation. In taking up the other and main topics show how the use of cigarets injures or destroys these very qualities which are necessary to real manliness. Forming a habit which is filthy, expensive, enslaving, and harmful can not possibly make a boy manly.

How did the cigaret hinder Mark from being a man physically? Bring out the points that it stunted his growth so he did not become so large and strong as he would have become; it injured his appetite and digestion, and his blood so that he was sickly, weak and pale; it hurt the strength of his muscles; it injured his nerves very much so that he was always nervous; and it injured his heart so

that he could not take brisk exercise as other really manly boys could. Emphasize particularly the effect tobacco has on the nerves and on the heart, showing that most cigaret smokers are nervous, and that as many as 12 or 15 out of 20 habitual cigaret smokers have weak or palpitating hearts.

How did it hinder Mark from becoming a man mentally? Show that whenever a boy uses tobacco or cigarets, it does considerable harm to his brain. He can not put his mind on his studies well or learn so quickly, and so the other and more manly boys get past him. If he begins to smoke when very young, he may not be able even to get through the high school. Some do not get through the grammar grades. Speak of specific instances (without mentioning names) which have been observed. Tell the class carefully but dispassionately what is certainly true, that no boy who begins young and continues to smoke cigarets can ever be so good a scholar or so bright a business man as he could otherwise be.

How can cigarets hinder a boy from developing a manly character? Show that it is the nature of tobacco as it is of other narcotics like alcohol and opium, to impair the brain so that character is injured in two ways:

1. The boy's conscience and reasoning power are blunted so that he does not see so clearly what is right and he is not so particular about doing it. He often becomes more selfish, impure, deceitful, and untrustworthy. He who had previously been truthful and honest comes to deceive his parents, and he sometimes becomes a liar and a thief for the sake of getting money with which to buy cigarets. It is not that the boy may not wish to do right, but this bad habit really changes him. Business men know this (and also that cigaret smokers are not so quick to think and act) so they do not wish to hire them.

2. The use of cigarets and tobacco, by injuring the brain impairs the boy's self-control, and it becomes hard for him to say "No" to temptation, so he easily yields. When he knows what is right and wants to do it he may not have the power. Sometimes when he knows how seriously the cigarets are hurting his body and mind and soul, his will-power is so broken down that he finds it difficult or impossible to stop. It is a dreadful thing to begin a habit that can make a slave instead of a free, manly man out of a fine boy.

Close the lesson by repeating the following true incident as an appeal to your boys to show real courage and manliness as this brave lad did.

"You don't dare smoke, 'cause your'e afraid

of your mother", said one boy tauntingly to his mate.

But the boy would not be "dared" into beginning a habit that could spoil his strength and character and success in life and replied, "I dare *not* to smoke, and that's more than you can say."

WHAT THE SCIENTIFIC TEMPERANCE FEDERATION IS DOING

Dr. S. Nakhimhoff, of Moscow, Russia, was a recent interested visitor at the headquarters of the Scientific Temperance Federation. Dr. Nakhimhoff has been studying the progress of the temperance reform in the United States in the hope of securing information that would be of assistance in promoting similar work in Russia. As a physician he was particularly interested in the Federation's unique collection of scientific facts on the alcohol question which is proving of such great value to all students of this subject, and was grateful for the substantial assistance the Federation secretaries were able to give in supplying information about other temperance organizations in this country.

The Corresponding Secretary of the Scientific Temperance Federation gave an address on May first on *The Relation of Alcohol to Tuberculosis* at a tuberculosis exhibit held in one of the Boston Municipal buildings under the auspices of the Norfolk County Medical Club. A large audience gave close attention to the discussion of the important influence of alcohol as a direct and indirect cause of this disease.

The National Prohibitionist in republishing the article on tuberculosis by Dr. Liebe which appeared in the columns of the JOURNAL last month, and which was translated from the German by the Recording Secretary of the Scientific Temperance Federation, remarked editorially that the JOURNAL had "done a valuable service in translating and giving the world the facts which the article contained." A few copies of the JOURNAL containing this article are still on hand. No better present service could be done than by distributing them. They may be had for \$4.00 per hundred as long as they last.

The *Alliance News* of Queensland, Australia, publishes a letter on temperance education in the United States written by the Corresponding Secretary of the Scientific Temperance Federation which was said by our Queensland correspondent to supply long desired information on this subject. In a

personal letter he adds, "We are surprised at the great progress made by temperance education in the States. It seems fully to account for the temperance successes of which we hear from time to time."

A Colorado Presbyterian minister writes:

"Many thanks for the literature sent. It meets my need admirably; indeed, it is the most convincing temperance literature that has come my way for a good while. Whatever you can do to assist me in acting intelligently in regard to a serious local cigaret problem will be greatly appreciated. My great regret is that my circumstances do not permit

my assisting your organization financially in its splendid work. It seems to me you are working along the right lines and I wish you a hearty Godspeed."

The Scientific Temperance Federation invites all interested in educational temperance or desirous of keeping up to date as to the facts about alcoholic drinks to become members. Associate membership (annual subscription only \$2.00) entitles such members to receive regularly publications of the Federation and special information desired. Teachers will find such membership particularly helpful.

COMMERCIAL FICTION VERSUS DISINTERESTED FACTS

BY E. L. TRANSEAU

AT the Forty-Seventh Annual Convention of the United States Brewers' Association held at Atlanta City, June 6, 1907, a speaker addressing the convention, said:

"By an educational campaign in enlightening the masses in regard to the nature of our product the people would soon be ripe for a law to consider beer a food and a necessity for the good and health of the public, and not subject to taxation."

That campaign is now well under way. Nearly every large newspaper and many small ones, and many of the magazines, contain flaring advertisements claiming the healthfulness, medicinal properties and food value of beer, and other alcoholic drinks. Even magazine literature is being invaded with stories subtly planned to throw discredit upon those who raise the voice of warning against the dangers of alcoholic beverages.

It is a contest between truth and error with human destiny at stake.

The following columns show the falsehoods that are being circulated in current liquor advertisements, and facts for their correction which should be widely disseminated:

I

Commercial Fiction:

In countries where most beer is consumed, intemperance is rarest.

Disinterested Facts:

Belgium has the largest per capita consumption of beer of any country of Europe. In 1897 the Prime Minister, M. Le Jeune, said publicly, "With us in Belgium alcohol produces frightful ravages." England ranks second in the consumption of beer, and her drunkenness is so threatening that 15,000 physicians petitioned to have school children taught the dangers of alcoholic drinks. Ger-

many stands third in per capita consumption of beer. A member of the German Reichstag said recently that there are 11,000 persons in the hospitals of Germany suffering from delirium tremens. In 1897, over 14,000 persons were sentenced by the courts to institutional treatment for alcoholism.

II

Fiction:

Beer aids digestion: it helps the stomach do its work.

Fact:

Prof. Chittenden of Yale found that beer and other malted beverages retarded stomach digestion more than the other liquors. Dr. Chase of Tufts College Medical School also reported that stomach digestion was delayed in a marked degree by beer.

III

Fiction:

Beer builds up nerve tissue.

Fact:

Dr. W. H. Riley, of the Colorado Sanitarium, says, "It has been well known to physicians and scientific men for a number of years that the use of alcohol, even in moderate quantities, when long continued, produces various diseases of the nervous system, such as paralysis, insanity, apoplexy. In hundreds and even thousands of cases of those who have been addicted to the use of this poison for any considerable time, severe and distinct organic changes have also been found by post mortem examinations in the brain and other parts of the nervous system."

IV

Fiction:

It is a tonic for pale, sickly people.

Fact:

Dr. Brunon of Rouen, presented to the Paris Academy of Medicine a report contain-

ing this statement: "A child of 18 months died of liver cirrhosis. His mother had given him two spoonfuls of beer a day since he was six months old." This is but one among many cases of "pale, sickly children" whose mothers have "strengthened" them with beer, wine, or "stout" until they died of gin drinker's liver.

V

Fiction:

Beer strengthens and energizes the whole system.

Fact:

Dr. Bergman, a German teacher, tried the effect of a small glass of beer upon the school work of four boys 15 to 17 years of age. They all agreed that it was more difficult to think after taking the beer and they made more errors in combining and spelling. In a foot-race in Germany, a contestant who was running in second place took a drink of beer after which he fell back to fourth place. Another who thought there was no harm in taking a drink of beer on the way, fell back to twelfth place, finishing only two minutes before the expiration of the time limit. The winner was a total abstainer. These are examples of the way beer "energizes the whole system."

VI

Fiction:

A tonic for invalids and convalescents. Highly recommended by leading physicians.

Fact: The physicians of Dornbirn, Germany, who are entrusted with the administration of the sick-fund have sent out a notice that hereafter it will not be dispensed to pay for alcoholic drinks. The reason given was: "The results of recent scientific investigation make it apparent that the medical employment of alcohol is not necessary. For those cases in which it has formerly been employed, pharmacy now offers medicines which are more certain, which are cheaper, and which create no tendency to misuse."

VII

Fiction:

The 3½ percent of alcohol in beer is simply a mild stimulant without injurious effects.

Fact:

Prof. Laitinen of Helsingfors has proved that an amount of alcohol proportionate to ½ pint of 3½ per cent. beer a day for a grown man reduces ability in animals to resist disease and injures progeny. Prof. Kraepelin, of Munich, and others found that the so-called "stimulating" effects of alcoholic drinks are only the beginning of the deaden-

ing effect of alcohol upon the nervous system.

VIII

Fiction:

It makes rich, red blood. Forty out of a hundred need lager for anemia—thin, pale blood and lack of red corpuscles.

Fact:

Prof. Laitinen's experiments included examination of the blood after amounts of alcohol equal to ½ pint of beer a day for a grown man. He found that even this small amount had a bad effect upon the red blood corpuscles. Surgeons agree that beer drinkers are dangerous subjects for operations, for their blood is in such an unhealthful condition that wounds do not heal quickly.

IX

Fiction:

Beer is a food drink that will build you up and keep you so.

Fact:

Dr. Herman Popert, a celebrated jurist of Hamberg, says of beer-drinking Germany. "Three thousand, three hundred million marks is the tribute which enslaved Germany must now pay yearly to the alcohol capital. And what does the alcohol capital give us in return for this tribute? An increasing number of criminals, an army of sick and diseased, a depraved future generation, a horrible deformity of the population. One needs only to walk through Munich, which lies fast in the fetters of the brewer, and look at the bloated bodies and faces."

Those who value strength and endurance do not care for bodies built the way beer builds them.

X

Fiction:

Beer is wholesome like milk, nutritious like bread, and more easily digested because in liquid form.

Fact:

A large factory in Germany has made a practical test of the difference between beer and milk, and the result is that the beer seller no longer finds it profitable to come to the factory, while the milk dealer brings more milk than the brewery wagon formerly brought beer. The milk quenches thirst, refreshes and invigorates; the beer made the men heavy, stupid and tired. Bread is 10 times as nutritious as beer and contains no poison. Beer contains enough alcohol to do more harm than its nutriment can do good. Beer slows the digestion of other food and the quicker the alcohol it contains passes into the system the worse for the drinker, for poisons that are absorbed quickly give the system less time to resist them.—*Our Message.*

Alcohol the Great Destroyer of Individual and National Prosperity

FOR LESSONS, DEBATES AND ESSAYS IN HIGH SCHOOLS AND COLLEGES

ALCOHOL CAUSES CRIME

I. NATURE AND EXTENT OF SUCH CRIME.

1. General crimes and misdemeanors.

a.—The Massachusetts Bureau of Statistics showed that "82 per cent. [of criminals] were in liquor at the time of the offence", and that "in 84 per cent. the intemperate habits of the offenders led to a condition which induced the crime," that "excluding minors, 96 per cent. were addicted to the use of liquors" (** p. 60). Chicago grand jury (Report of December, 1900), stated that "at least 90 per cent. of all criminal cases coming directly before this body have some saloon connection, direct or indirect." (** p. 61.)

2. Specific crimes.

a.—"*Gambling* and the social evil are closely allied with the perils of drunkenness." (Com. of Fifty.)

Regarding the *social evil*, Dr. Sullivan asserts that "In rather less than 50 per cent. of cases either chronic alcoholism or simple drunkenness is the causal condition." (* p. 120.)

b.—Prof. Hillier of Kiel reported that autopsies on 300 *suicides* showed that nearly 50 per cent. were alcoholists, a minimum estimate since "the use of alcohol among young suicides though adequate to cause severe mental depression, could not have produced sufficient pathological changes in the internal organs to be observable in post-mortem examinations." (* p. 116-7.)

Dr. W. C. Sullivan, Medical Officer in His Majesty's Prison Service (England), shows that "in 220 consecutive observations of attempted suicide, the proportion due to alcoholism was 78 per cent., the usual condition present in four-fifths of the cases being drunkenness supervening on chronic intoxication." (* p. 117.)

c.—Investigation by Dr. Sullivan concerning *homicides* and *aggravated assaults* showed (* p. 119-20):

(1) "Of 200 male offenders convicted of murder or of grave homicidal attempts, 79 per cent. were of alcohol habits, and in 60 per cent. the criminal act was directly due to alcoholism."

(2) "Of 500 cases of less serious character, chiefly *aggravated assaults*, 82 per cent. were attrib-

utable to alcohol." In nearly all the homicidal cases and "in 80 per cent. of minor offenses intoxication had attained a fair degree of chronicity."

Abstinence decreases crime; e. g., San Francisco, Kansas City, Kansas, Maine, etc.

II. HOW ALCOHOL CAUSES CRIME.

1. By producing physical deterioration of



"The Spring is here—The delicate footed May,
With slight fingers full of leaves and flowers."

the delicate nerve elements of the brain "so that its finest, latest organized, least stable parts which subserve moral feeling and supreme will are marred." (** p. 191.)

a.—Moral sense blunted or destroyed so that feeling of moral responsibility is lost. (** p. 195.)

b.—Reasoning faculties befogged so that consequences of reckless, self-pleasing actions and inordinate sway of passions are not appreciated and crime inhibited. (* p. 112.)

Stars throughout lesson refer to books as follows: * *Alcohol and Human Body*, Horseley and Sturge; ** *Psychology of Alcoholism*, George B. Cutten; *** *Saloon Problem*, Prof. J. M. Barker. Supplied by Journal as per advertisement on cover.

c.—Altruism decreased and *ego* unduly prominent, hence rights of others are not considered as before.

d—Self-control impaired or destroyed.

- (1) Drinker becomes of the "hair-trigger type," is easily irritated and imagines grievances. "Emotional manifestations of hatred, fear, and jealousy are constantly aroused and innumerable crimes are committed by persons who [although under the influence of alcohol] are not 'drunk'." (* p. 114.)
- (2) Drinker's self-restraint is often so impaired that under real provocation, although sober and realizing that his best interests demand that he hold his temper, he is unable to do so and crime ensues.
2. By sometimes causing latent criminal tendencies to develop. (** p. 205.)
3. By impairing judgment as to the power or intensity of action so that one who is intoxicated may strike a crippling or murderous blow when only light tap or blow was intended. (** p. 205.)
4. By indirection through effects on offspring:
 - (1) Children of drinkers are apt to be born with defective moral sense, weak or passionate nature, or with actual bent to crime. (MacNicholl.)
 - (2) Children may become vicious or criminal through exposure to bad environment due to parental habits.

ALCOHOL CAUSES POVERTY

I. EXTENT OF SUCH POVERTY.

1. Investigation shows that about 25 per cent. of all poverty relieved by charity organizations, and 37 per cent. of poverty in almshouses, as well as 45 per cent of all destitution of children was due directly or indirectly to intemperance, but no case was included in which drunkenness was not "so important a cause that without it the poverty would not have existed, or unless it was obviously the principle and determining cause." (Committee of Fifty.)

II. HOW ALCOHOL CAUSES POVERTY.

1. By lowering earning capacity and decreasing total output of work.
 - a—Through physical inefficiency.
 - (1) Alcohol impairs strength and delicate action of muscles, hence reduces output of piece-work and limits field of highly-paid manual occupations.

Aschaffenburg's experiments showed 8.7 per cent. decrease in compositor's work.

- (2) Impairs eyesight and hearing, essential to work on railroads, etc.

- (3) Brings on nervous debility and hastens exhaustion, so that the drinker lacks physical stamina required to do highly paid mental or muscular work.

b—Through mental inefficiency

- (1) Slight acute alcohol poisoning lowers quality of mental work and by lengthening the time taken to perform complex mental processes, decreases the output. (Kraepelin. *et. al.* * p. 102.)

- (2) Injures higher brain centers, thus impairing power to attain high degree of mental training, and also judgment and executive ability necessary to large undertakings.

- (3) Tends to inhibit creative work.

Wine never invents anything.—Schiller

c—Through moral inefficiency

- (1) Alcohol undermines character, hence in highly paid positions in banks, etc., where moral probity and responsibility are essential drinkers are barred out. (S. P. J. p. 134.)

2. By creating an imperious appetite, the indulgence of which requires large, ever-increasing sums of money.

Fasten the drink habit on the boy and you will have mortgaged his future earning capacity to the brewer and the distiller.—Mary H. Hunt.

3. By inducing improvidence through allied wasteful habits.

Mr. A. Crosby said before the U. S. Senate Com. that the wages of mechanics are set by drinking men who, because of their improvidence have no economic reserve, and, hence, are obliged to force their labor on the market, where it brings a low price, thus forcing down the wage average.

4. By causing enforced idleness due to preventable causes:

- a—Through *delays* due to the fact that "behind every idle drinker waits a procession of men, every one of whom has to stop because that man's work is not done. The drunken shipmaster does not make the port in time, etc".

- b—Through *accidents* due to (a) falls, shakiness, or miscalculations as to distances among machinery, on railroads, etc.; (b) mental stupidity which allows drinkers to be injured who normally would "have their wits about them".

"In Belgium, it is calculated that 43 per cent. of accidents in mines and factories are due to alcohol." (* p. 100.)

- c—Through *disease* which is (1) directly due to the effects of alcohol on the various organs, as fatty degeneration of the heart, or on the body pro-

cesses, as on nutrition; and (b), indirectly, to lowered vital resistance manifested by increased liability to contract disease (especially germ diseases like pneumonia, typhoid fever, blood poison, etc.) and the greater severity and longer duration of the same. (* See chapters giving details.)

5. By shortening life and thus productive years.

English life insurance experience covering 50 years shows that the death rate among moderate drinkers was 35 per cent. higher than among abstainers. Article by Van Cise in *Journal*, Feb. 1907.)

6. By destroying personal initiative and ambition so that the drinker is easily satisfied with meager attainment, poor environment and low wages and by lowering will power so that he lacks the resolution to carry out plans for his own betterment when they require long periods of application and fixed purpose.
7. By impairing judgment as to the best time and method of doing work or carrying out business projects which results in loss of a part or all of the profits.
8. By injuring offspring.

a—Parental alcoholic indulgence (1) makes children dull, nervous, and sickly and otherwise unable to "take a man's place"; (2) creates defectives such as epileptics, imbeciles, etc., thus burdening families or the state with their entire support.

MacNicholl says that "of 2713 children of drinking parents only 23 per cent. were proficient; 77 per cent. were dullards; 30 per cent. very deficient; 76 per cent. suffered from some neurosis or organic disease." (*Journal*, Jan. 1906.)

ALCOHOL CAUSES INSANITY

I. EXTENT OF SUCH INSANITY.

1. Dr. Billings reports that examination of 5,145 cases of insanity in insane hospitals of this country, showed that 24.08 per cent. of all admissions to asylums were considered to be due to the influence of liquor. (** p. 236.)
Dr. Clouston of Edinburg, an expert of international reputation, stated that in Scotland in 1902, 28 per cent. of all admissions to insane hospitals were "alcoholic lunatics;" of men alone, 35 per cent. were such. (** p. 237.)

II.—NATURE OF SUCH INSANITY.

1. Acute alcoholic mania, delirium tremens, chronic alcoholic dementia, dipsomania, etc. (** p. 241-76.)

III. HOW CAUSED.

1. Directly
 - a—By inducing deterioration and instability of the mind as a result of its

depressing action upon the brain and spinal cord.

- b. By inducing excesses which upset mental balance of those who would otherwise retain their sanity.
2. Indirectly
 - a—By hereditary alcoholic taint due to habits of parents. (** p. 213-219.)
 - b—By misery on account of cruelty, neglect, etc., on the part of loved ones.

MR. PABST'S. PRIZE OFFER

MR. Pabst, of ale fame, has offered a prize for the best letter (in his judgment) commenting upon his article "Temperance versus Prohibition," in the May number of a popular magazine. The *JOURNAL* has no idea of competing for the prize, but if it had, it would need but four words to knock the props from under Mr. Pabst's article. Those four words are: *Alcohol weakens will power.*

Mr. Pabst's argument is that it is better to train the will than to prohibit the use of alcohol. It would be just as rational to advise the athlete to begin his muscular exercises by taking *curare*, a poison that paralyzes the muscles.

Train the will power, certainly, but while training it do not administer a poison whose physiological action is to weaken the brain. It has been clearly demonstrated that one of the first effects of alcohol upon the brain is to weaken the will-power, self-control, the latest faculty acquired, the one most easily lost. It is by no means the weakling who is in greatest danger from alcohol; the most highly developed risks first his highest endowments.

Train the will-power, by all means; but train it to stand like adamant against all seductions to benumb with drugs the very organ of the body with which man discriminates between truth and fallacy, decides upon his stand and holds it in spite of seduction, opposition, flattery or persecution.

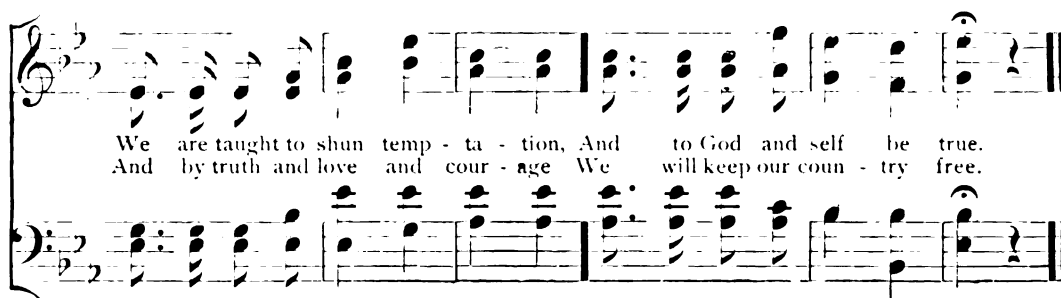
The mother asked little Dot to go into the next room and see if the clock was running, for she had not heard it strike all afternoon. Dot came running back, put her curly head into the door, and exclaimed: "Why, no, mamma, de clock ain't a'runnin'. It is des stannin' still and a'waggin its tail."—*Ex.*

"A violet by a mossy stone
Half hidden from the eye
Fair as a star when only one
Is shining in the sky"

CHILDREN AND THE FLAG OF FREEDOM.



Chil - dren of a glo - rious na - tion; See our flag; red, white, and blue.
We're the com - ing men and wom - en, Ev - er let our mot - to be:



We are taught to shun temp - ta - tion, And to God and self be true.
And by truth and love and cour - age We will keep our coun - try free.

NEW SCIENTIFIC TEMPERANCE LEAFLETS

PRICE PER 100

Social Service in the Temperance Reformation By Cora F. Stoddard, A. B.	\$2.00
Important Place of Physiology in the School Curriculum By Prof. F. M. Gregg, A. M.	1.00
The Problem of Americanizing One Million Immigrants Yearly By J. C. Jackson, D. D., Ph. D. . . . .	.75
Scientific Temperance in the First Six School Grades By Mrs. Annie W. Clark . . . . .	.30
Alcohol as it Affects the Brain and Nerve Tissue By Vaclav H. Podstata, M. D. . . . .	.75
Relation of the Drink Problem to the Perpetuity of the Nation By T. A. MacNicholl, M. D.	1.00
They Want Your Money (Popular Beer Leaflet) By E. L. Transeau. . . . .	.45
The Young Man and Tobacco By Winfield S. Hall, Ph. D., M. D. (Reprint of Article in February 1908, JOURNAL.)	\$3.00

Fresh, Attractive **Powerfully Convincing**
Samples of Each, only \$.10

PRICE PER 100

International Course of Study,	\$3.50
---------------------------------------	--------

Recommended for use in elementary schools of Great Britain by the Committee representing 15,000 British Physicians. Used in whole or in part in several states, and many counties and cities of America. Complete for nine years.

Three Greatest Popular Books

— ON THE —

Alcohol Question

PRICE

Alcohol and the Human Body, \$1.65

By Horseley and Sturge, London

Psychology of Alcoholism, - \$1.65

By Geo. B. Cullen, B. D., M. A., Ph. D.

The Saloon Problem, - \$1.10

By Prof. J. N. Barker, Best All-round Book on Economics and General Aspects.

Combination Offers

Alcohol and the Human Body,	\$1.65	}	ONLY
or			
Psychology of Alcoholism.	1.65		
Physiology Journal, one year,	.60		\$1.80
The Saloon Problem,	\$1.10	}	ONLY
Physiology Journal, one year.	.60		
			\$1.40
Three Books and Journal, one year,		}	ONLY
			\$3.85

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull Street, Boston, Mass.

Please mention the JOURNAL when writing to advertisers.

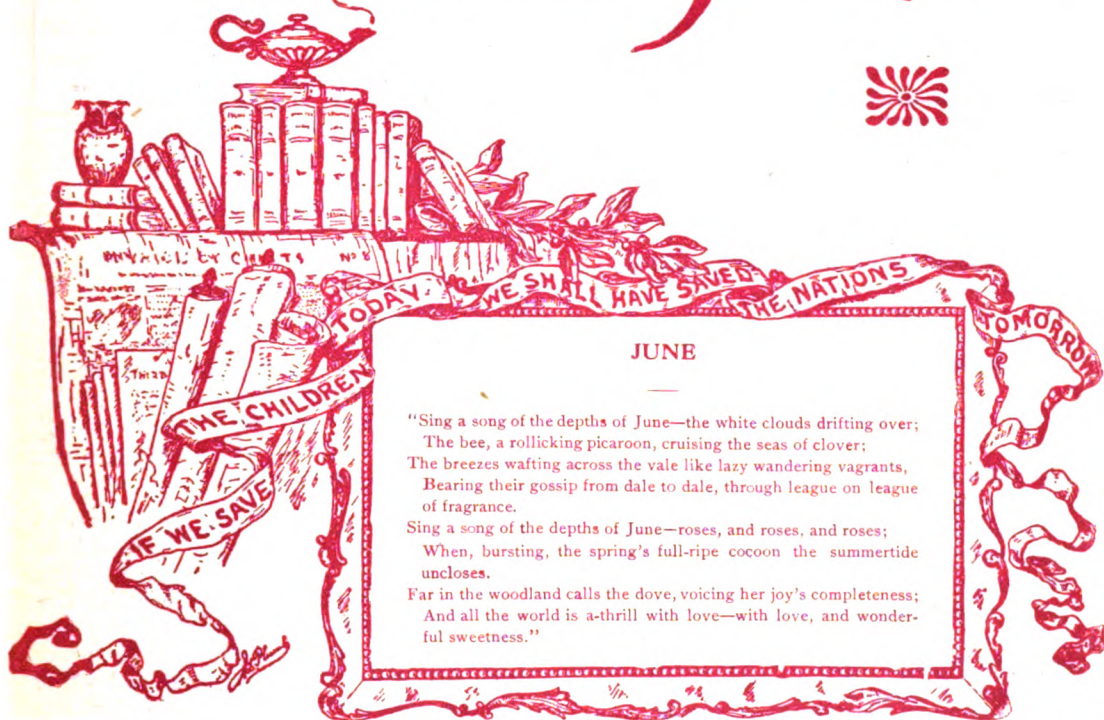
Digitized by Google

Scientific Temperance Instruction in Germany
Logical Prevention of Physical Degeneracy



Boston Public Lib

THE SCHOOL PHYSIOLOGY JOURNAL



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVII. NO. 10

JUNE, 1908.

Digitized by Google

New Century Series

— OF —

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fullness and accuracy of the treatment in regard to the nature and effects of alcoholic drink and other narcotics on the human system.

Send for Descriptive Circular.

American Book Company

New York

Cincinnati

Chicago

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

Child's Book of Health. Revised Edition.

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

How to Keep Well. Revised Edition.

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition.

The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health.

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology.

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work.

GINN & COMPANY, Publishers

Boston

New York

Chicago

London

San Francisco

Atlanta

Dallas

Columbus

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whenever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy.

\$4.00 per Dozen.

\$25.00 per 100.

Address

HENRY R. PATTENGILL

Lansing, Michigan.

CONTENTS

	PAGE
Scientific Temperance Instruction in Germany	145
Logical Preventive of Physical Degeneracy	146
A Fishing Trip in the Mountains	148
Letter from a Little Known Country	149
Gains That Result from Drunkenness	149
Fitting the Many to Survive	150
Wine in Old Age	150
Grammar Lesson—Summer Hygiene	151
Editorials	153
Some Objections Considered	154
Cigaret Smoking	155
English Physician on the Cigaret Habit	155
Abating the Cigaret Evil	156
Primary Lesson Story—Rest and Sleep	157
Index	157
Book Notices	159

BOOK NOTICE

If the text of *Good Health for Children** were as bright as the pictures, it would be better adapted to aid teachers in inspiring their pupils with the desire of beautiful living. If the book showed more clearly the reasons for avoiding some unhygienic practices, particularly the use of beer and wine, it would afford better assurance for the future health and strength of those for whom it is written. Undoubtedly opinions will differ as to the merits of the book, which has some good points, but to us it seems to lack brightness of style and definite information on important matters of hygiene.

*GOOD HEALTH FOR CHILDREN, by Bertha M. Brown. Fully illustrated; Boston. D. G. Heath & Co., \$0.45.

SCHOOL PHYSIOLOGY JOURNAL. 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

Digitized by Google

School Physiology Journal

Vol. XVII

BOSTON, JUNE, 1908

No. 10

Kinship of Spirit

BE of good cheer, brave spirit. Steadfastly serve that low whisper thou hast served; for know, God hath a select family of sons now scattered through the earth, and each alone, alone who are thy spiritual kindred, and each one by constant service to that inward law, is weaving the sublime proportions of a true monarch's soul, beauty and strength, the riches of a spotless memory, the eloquence of truth, the wisdom got by searching of a clear loving eye that seeth as God seeth.

These are their gifts, and Time who keeps God's word, brings on the day to seal the marriage of these minds with thine, thine everlasting lovers.

Ye shall be the salt of all the elements, world of the world.—Emerson.



SCIENTIFIC TEMPERANCE INSTRUCTION IN GERMANY

BY PROF. J. G. EVERT, HILLSBORO, KANSAS

IN GERMANY there is no legislation as yet providing for compulsory instruction in the effects of alcohol on the human body, as we have it in this country. The necessity for such instruction in the schools is, however, conceded on all hands, including the highest officials.

It was on the thirty-first of January, 1902, that Dr. Studt, the German Commissioner of Education, issued a circular admonishing all the teachers of the public schools "to participate in the fight against the enormous evil of intemperance". The next year Count Von Posadowsky-Wehner, the Imperial Minister, said that "the teachers were called upon by their personal example to show the people the way to remedy the great evil".

THE TEACHERS ORGANIZE AGAINST DRINK

As a result, the German Abstinent Teachers' Association, together with a few hundred High School Professors, has now reached a membership of about one thousand. A dissemination of systematic knowledge within their own ranks on the subject of alcohol has been the first care of the teachers. Besides the classic works of Hoppe and Helenius and a host of minor treatises on the subject, the most popular manual of information for the teacher is *Der Alkohol* by J. Peterson, editor of *Die Enthalttsamkeit*, the official organ of the Abstinent Teachers' Association. Recently a series of charts, treating of all the phases of the alcohol question in a most thorough manner, was

published by Stumpf and Willenegger in Zurich, and seems to have prospects of putting all other works of a similar nature in the shade. In this series are eight "graphs" representing "Alcohol and Crime," thirteen on "Alcohol and Labor", four on "Alcohol and Disease", five on "Alcohol and Mortality", eight on "Alcohol and Degeneracy", nine on "Alcohol and Economy", and four on "The Growth of the Anti-Alcohol Movement". The matter presented on these charts may also be had in album form.*

SPECIAL TEXT-BOOKS ON ALCOHOL IN USE

From the above it will be seen that the German teachers are now fairly well supplied with works on the general subject of alcoholic drinks, so that the sources of trustworthy information are not lacking as far as the teachers are concerned. Heretofore there has been a want of manuals and text-books for the use of pupils, treating this subject in a satisfactory manner. But now things are beginning to change. A brief but excellent manual, entitled *Gegen den Alkohol* has been prepared for use in the secondary schools and gymnasia by Dr. and Mrs. Matti-Helenius-Seppala. New editions have just now also been issued of text-books long in use, in which the subject of alcoholics is on a level with the best temperance thought. It pays to take a look into a few of these German text-books and see what they have to say on this subject.

*Can be furnished by JOURNAL for \$7.50 and carriage.

FACTS ABOUT ALCOHOL IN SCIENCE TEXT-BOOKS

In the *Berliner Realienbuch*, an elementary science manual for use in the schools of Berlin, we read on page 522 in the section on chemistry: "*Alcohol, a destroyer of health.* Alcohol is a poison, therefore beer, wine, and brandy have an injurious effect on man, especially on children. If alcohol is taken in larger quantities, it causes diseases of the stomach, intestines, kidneys, the heart, and the nervous system, causing either a chronic diseased condition or an early death."

Nicholai's *Realienbuch für die Oberstufe der Gemeindeschulen* (science manual for the upper grades in the district schools) has the following passage on page 316:

"Alcoholic beverages are the most injurious of all condiments. Although they cannot be denied to possess some food value, yet this is greatly surpassed by the poisonous properties of their most active ingredient, alcohol, which belongs in the same category of poisons as morphine and chloral. Its apparently stimulating effect is now known to be delusive, as it is based on the paralyzing of certain functions. It paralyzes the nerves leading to the circular muscles of the blood vessels. These vessels expand and thus cause the well-known redness of face. Of the mental faculties it paralyzes the power of reasoning and sets prudence aside; hence the venturesomeness and inquietude manifested by persons under the effects of alcohol. There is hardly an organ in the human body that is not affected by the ravages of alcohol. In the liver it causes cirrhosis and shrinkage. The circulation of the blood is deranged by the injurious effect on the heart and arteries; in times of contagious diseases, alcohol breaks the power of resistance. Its deleterious effects are greatest

on the delicate organs of the child. Children, therefore, should not get a single drop of alcoholic drinks—neither beer, nor wine, to say nothing of brandy or whiskey."

The celebrated *Realienbuch* of Kahn Meyer and Schultze, of which the eighty-fifth edition recently left the press, has now departed from its former standpoint on this question and has the following to say on this subject:

"The albumenoids build up our flesh and blood; starch, sugar, and fat furnish warmth and strength by combustion. Only such animal and vegetable substances as contain albumen, starch, sugar and fat can be classed as articles of food. Wine, brandy, coffee, tea, spices, and vinegar contain none of these ingredients and can therefore neither build up the body nor furnish warmth and strength. We partake of them only because of their gratifying taste or stimulating character, for which reason they are known as condiments. Coffee, tea, spices, and vinegar are harmless in small quantities; hence we may partake of them, but must avoid over-indulgence. Wine, brandy, and beer contain spirits (alcohol). This is an intoxicating poison. Children should never take a drop of wine, brandy or beer. Adults also preserve their health and faculties best if they abstain from all intoxicating liquors. It is true that beer contains some refreshing carbonic acid and a little albumen and sugar, besides the alcohol, but the quantity is so insignificant that it is false to call beer a 'liquid bread.'"

These passages will suffice to show that the results of scientific temperance research have gained a strong foothold in the schools of Germany. And from this position it is not very far to the next step—the introduction of compulsory temperance instruction in all the schools of the Empire.

THE LOGICAL PREVENTIVE OF PHYSICAL DEGENERACY

BY WALTER N. EDWARDS, F. C. S., LONDON

WITH the recent marvellous growth of interest in the welfare of the child, there have arisen many phases of education that a short time ago were never thought of. The mental and moral equipment of children, more or less, was thought to compass the whole scheme of education; but today a broader and wider view is taken, and it is now generally recognized that something more than mere mental stock-in-trade and a small measure of moral training is necessary.

In the evolution of education the stage has been reached when it seems to be necessary to give the boys and girls some information as to the laws of life and of health, the better to fit them for the stress of life.

The Committee on Physical Deterioration in their report to Parliament, July 10th, 1904, said: "The Committee believe that more can be done to check the degeneration resulting from 'drink' by bringing home to men and women the fatal effects of alcohol on physical efficiency than by expatiating

on the moral wickedness of drinking". The only effective plan of doing this is to begin in the school before habits are formed and character is fixed.

It is impossible to reach the parents of to-day, but it is possible to reach, while they are still in the schools, the prospective parents of the future, and thus do something practical toward enhancing the chances of life for the children of the next generation.

THE CONNECTION OF TEMPERANCE WITH HYGIENE

There are many educators who can see the value of teaching some degree of hygiene, but who fail to see where specific teaching in regard to temperance comes in. The following points are therefore presented for consideration.

1. Hygiene is the science of health, and as the common use of intoxicants has a great deal to do with the causation of ill-health and disease, some definite instruction should be given regarding it, such as the following:

(a) That alcohol, habitually used, can of itself produce disease from which the abstainer is exempt.

(b) That it will aggravate disease to which all are liable.

(c) That it renders those who habitually use it more open to attacks of various forms of illness.

(d) That the alcoholic has a worse chance of recovery from a fever or an injury than an abstainer.

2. Environment is an important factor in determining health, and the bad environment of the home is a common cause of sickness and disease. A careful estimate shows that each working-class family of four and a quarter in Great Britain is spending about \$75 per annum in alcoholic liquors. What a vastly better environment could be secured by the expenditure of this money in clothing, food, and comforts!

3. The most common originator and helper of disease is malnutrition. One of the commonest reasons for lack of food in many homes is that money is spent in strong drink, under the impression that it is of equal value to bread and milk. Much might be taught in connection with hygiene under the heading of food values. Another great promoter of death and disease is overcrowding. Here, again, the question of money hygienically spent comes in. Save the money from drink and add another room or two to the house.

4. Alcoholism is an important factor in the production of the degenerate. The boys and girls should be taught that alcohol is never a necessity to the healthy body, and that its use is hurtful to the healthy, growing tissues of the child; and that even when manhood and womanhood is reached the quantity that can be tolerated may easily be exceeded. Hygiene attempts to attain the best condition of life and of health, and in this sense, "toleration" is not hygienic. Bad air, insufficient food and clothing, want of sunlight, and many other unhygienic conditions, can be tolerated, but they are not the best conditions.

5. The alcoholics of today are said to be those who by their alcoholism have proved themselves to be intolerant to alcohol. As no one knows beforehand who is or who is not tolerant to this drug, it would be in accord with the doctrines of preventive medicine to teach boys and girls to leave it severely alone.

6. Since intemperance is the practical end of the non-resistant user of alcohol, and "since the classes most prone to industrial alcoholism are also very prone to have large families, and since the children of the alcoholic appear to abound in the various categories of the degenerate, it is at all events likely that this action of alcoholism on the health



and vitality of the stock is the most serious of the evils that intemperance brings on the community." The only way, therefore, to prevent alcoholic degeneracy is to teach the truth about it as a part of ordinary hygiene.

These are some of the ways in which the teaching of temperance may be legitimately and educationally linked to the larger subject of hygiene.—*British Journal of Inebriety.*

A FISHING TRIP IN THE MOUNTAINS

SEVERAL years ago a number of boy friends invited me to partake of their vacation and go with them from New York City on a fishing trip in the mountains. To me there was no joy in the fishing or in the hunting. The joy which I experience from nature is the love of intelligent consciousness in motion.

If, however, I had attempted to advise these boys in regard to hunting and fishing, I would have broken the friendship which I already had. If I was to develop a love-consciousness, I must not begin by severing the friendship which already existed between us, in attempting to force my ideals in regard to the hunting and fishing into the consciousness of the boys who had not had my experiences, and who consequently could not have the same type of ideals.

Now what was the method? I kept directly in touch with them, enjoying the buying of the fishing-tackle, studying the subject of bait, discussing the different types of fish which we were likely to find on this trip, studying guns, ammunition and the like.

Then we visited, as if by accident, one of the aquariums and made a study of the fish.

The attention was turned whenever I could do so to the activities of the fish and especially to the motions of their bodies. Attention was given to the darting, turning, upward and downward motion of the fish through the water, and comparisons made between its activities and the activities of our own bodies, bringing to the consciousness of the boys the fact of the much greater agility, and responsiveness of the body of the fish.

We also visited the animals in Central Park, watching the monkeys, thoroughly enjoying their antics—the swinging of their bodies, their balance; watching peacocks strut about with such wonderful sway of head and back; watching the twisting and turning of the elephant's trunk, the undulating movement of the lion's back and even the twisting, curving motion of the bodies of the snakes. All of these things were suggested, of course, as

though they were nothing to be *taught*, and the boys took them up because of the joy of watching—because the greatest joy we experience is in watching other forms of life and in giving attention to the various modes of motion.

On the train we all had great fun in adapting the motion of our bodies to the motion of the train; on the boat in adapting the motion of our bodies to the motion of the boat; and when driving to the camp over the rough mountain roads, great fun was had by all the boys bouncing freely here and there around in their seats in response to the jerking and bouncing of the wagon.

As soon as we had arrived at the camp, I made at once for a large pool formed by the stream in which most of the fish were to be found. Scarcely had I reached the bank when I saw a whole school of fish. Quietly I motioned to the boys and each one came tiptoeing down to the bank and at once became intensely interested in the activities of the fish.

Here one suggested in a whisper, that he skip back and get his pole and fishing tackle, but instantly all the others chimed in, "No," and asked him to be quiet so as not to scare the fish away.

Then I knew my object had been accomplished, that the boys had learned to love life in motion more than they loved to fish and to hunt. Within five minutes every boy was down quietly on his abdomen intently interested in watching every single action of the fish. You can easily see how we applied this to bird and game; and as a result, although not a word was said by me against the killing of birds, game, or fish, not a single fish or animal was killed during the camping period.

Watch the intelligent motion of animals, birds, bees, flies, mice, any type of animal, and notice how soon your attitude toward that form of life changes from one of dislike or lack of interest to one of intense appreciation, interest and love.—*New Thought.*

METHODISTS AND TEMPERANCE EDUCATION

The General Conference of the Methodist Episcopal Church has just taken a strong stand on the question of temperance education as the following resolution shows:

"We protest against any attempting to repeal the scientific temperance instruction laws which exist generally throughout the states, and recommend that by every means at our command we encourage teachers in our public schools and higher institutions of learning to give such instruction in an interesting and practical manner."

A LETTER FROM A LITTLE-KNOWN COUNTRY

Editor of School Physiology Journal:

Some time ago I saw an article in the *Michigan Christian Advocate* copied from your JOURNAL. I sent a letter asking them to forward it to you. This morning I received the splendid package of samples. The paper is fine and just what my physiology class will enjoy. I forward you our subscription. On this mail I send you a copy of our school paper, *The Students' Voice*. On page 12 you will find a most original article written by a boy who has studied English only one year. He wrote this without any help and without any suggestions whatever.

It might be of interest to you to know something of the curses of this country. Tobacco is used very little except in the form of cigarets. Even many quite old men are slaves to this habit. As I have seen a general of the Bolivian army continually with a cigaret in his mouth, I have thought, "He that ruleth his own spirit is greater than he that taketh a city." Two of the boys in our school have been unable to make any progress because of the cigaret.

The curse of the Indians, who form the greatest part of the population, is alcohol and coca leaves. The former they take 40 per cent. pure. That which we use in a stove they reduce three or four times. Many crazy people are seen as the result.

American and English mining companies are selling their souls by giving alcohol to their Indian laborers every feast day, claiming that they cannot hold their men any other way.

Almost no Indian can be found who does not carry a "chuspa", a wallet for coca leaves. These leaves come from the plant from which cocaine is made. They so benumb the senses that an Indian prefers them to food when he is very hungry. Thus he starves his body when he thinks he is getting strong. An Indian will make a long trip of several days with a wallet of coca leaves and almost no food. To get more rapid results they often paste leaves on the face and temples, but these generally have added power because they have been blessed by the priest for a certain amount of money.

"Chica" the native beer, also does much harm. Generally, it is made with many poisonous drugs to hasten the process. It is very much like hard cider.

Liquor of all kinds seems to have a peculiar effect on all these people. When under its influence they will laugh and cry,

making the most hideous and unnatural sounds, such as I have heard at home.

La Paz, Bolivia. J. CARLETON FIELD.

GAINS THAT RESULT FROM DRUNKENNESS

BY THOMAS VIDANGOS

IF you want to be always thirsty, you must be drunk, since the more often you drink the more thirsty you will be and the more you will want to drink.

If you want to be always poor, you must be drunk, and in a short time you will be covered with rags and be without money.

If you want that your family should die of hunger, you must be drunk, because the drunkenness will consume the means to maintain the family.



If you want to be the pest of society, you must be drunk, and we will flee away from you as if you were the pest.

If you want to disclose your craziness and your secrets, you must be drunk, and in a short time, others will know them as the drink is entering your body.

If you want that somebody should break your bones; to fall under the coach-wheel; and to be carried to the prison, you must be drunk, and it will be a wonder if you do not receive such treatment.

At last, the drunkenness—

Banishes the reason,

Destroys the memory,

Deforms the beauty.

It makes a man lose the force; it makes wounds inside and outside the body; it robs the bag full of money, and it is the beggar's company.—*Student's Voice*, La Paz, Bolivia.

FITTING THE MANY TO SURVIVE

BY ROBERT JONES, M. D.

Superintendent London County Hospital, Lecturer
on Mental Diseases at Westminster Medical
School, London

AS medical men, we have now abandoned the maxim of "the survival of the fittest" for "fitting the many to survive." There is only a certain limited amount of force and therefore of work in the world, but we can raise the potentiality of this by improving the individual as a working unit. If we can produce a favorable environment, we can improve the unit and may thus counteract some of the inherited frailties, vices of organization as they are termed, and in this way we can remove some fertile causes of drink.

In all the affairs of life, conduct counts for much and "example is always better than precept." The impressions given to the young by example and by social usage, instruction as to the evil effects of alcohol, the value of clean lives, the care that should be exercised by everyone to keep his life and person clean, the pleasure of open-air living, the importance of fresh air and light, of good food and how to select and cook it to the best advantage—all these are inestimable auxiliaries in the cause of temperance. Increased facilities for healthy outdoor exercises and recreation, such as bicycling, and the controlling factor of public opinion as to the value of temperance in all things, also assist the cause.

Man is a gregarious animal and the conscious self is greatly influenced by the opinion of others. I have, therefore, great faith in "communal vigilance" and I believe in the enrolling of postulants in the cause of temperance, which encourages the feeling of brotherhood, and that we are not alone in the cause. Because of the value of this community of purpose I believe in temperance clubs, bands of hope, and all such associations where children are taught to look upon drunkenness as "bad form" and a vice, and to despise it as well as the drunkard; where a healthy opinion is formed among themselves, and where each member is pledged to self-respect and sobriety. To teach the young how to become good citizens, that life has its duties as well as its privileges and rights, is to teach temperance. I also believe in lectures such as are held by our diocesan authorities and by the various agencies united in the temperance cause. Further, I believe in the united action of all these agencies, so that pressure may be brought to bear upon the legislature to raise the health and vigor of the people and to lessen disease and mortality through the action of alcohol....

The hopelessly debauched and immoral inebriates should be detained in reformatories, removing this form of vice from our streets, and leaving us free to direct our attention to a more hopeful field, viz., the rising generation, whose interests and that of morality, we earnestly appeal for a more vigorous control of the drink traffic and for power to diminish the facilities for obtaining it which glare with specious temptation at nearly every street-corner.—*Journal of Inebriety*.

WINE IN OLD AGE

HAVING been myself what is known as a "moderate drinker" up to about fifty-two years of age, my own experience and large opportunities of observing that of others, compelled me some twenty years ago to come to the conclusion that most of those patients who suffered from indigestion or from what they termed "rheumatism, gout", etc., were greatly improved in health by appropriate diet and some simple treatment; and that many were permanently cured, provided that they discontinued the use of alcoholic drinks altogether.....

It is well known that a popular idea respecting the value of alcohol to elderly men has existed, time out of mind, expressed by the quaint saying, "Wine is the milk of old age." Desirous of testing this allegation at all events—and, I confess, with a faint hope that there might be some truth in it for myself—I made the experiment some five or six years ago of taking, during a period of about two months, a single claret glass, say three ounces of good wine every day at dinner only. But I was compelled to give it up, as I felt unmistakable signs of the return of pain and stiffness in the joints, together with the recurrence of sick headaches, from which I had suffered severely for many years before. For these I had at that early date obtained no relief, notwithstanding much treatment, until I abstained entirely from alcoholic drinks. When, after a few months, I lost my local pains and the sick headaches completely. Moreover, the joints gradually lost their stiffness and ultimately became as supple and mobile as they were in youth, and continue absolutely so until this day. (January, 1903). It may be fairly said in reply that one example does not suffice to prove a case. But it is not a single example, and really designates a very large class of active men among all ranks, possessing a more or less similar temperament, of which a type is here described, and it is for such that I have found it so successful.—SIR HENRY THOMPSON.

Summer Hygiene

While many points of hygiene are the same at all times of the year, there are those such as measures for avoiding sunstroke or infection from insects, which are mainly necessary during the summer months. Hence it seems timely to offer suggestions for general summer hygiene which may be used in advanced grades or considered by the school on some Friday afternoon. Pupils should make permanent notes for reference. Teachers in lower grades should devote a lesson to bringing out the simpler points such as proper foods and beverages for hot weather, care of milk, the reasons why insects are unclean and may be dangerous, and the means of relief from ivy or other poisoning.

SUMMER DIET

IN considering the relative value of *foods* bring out the difference between food like pork, the red meats, and those which have a large sugar content, and those which like fruits, vegetables and salads, furnish minerals and acids which are palatable and help to keep the body cool. Show how the excess of starch in raw unripe fruits, and the chemical change in those which are over-ripe, may cause serious intestinal disorders, particularly in children whose digestive organs are not yet very strong.

Point out the necessity of absolute cleanliness in the preparation of *fruits* and *vegetables* which may have been handled by uncleanly or even by sick persons.

Emphasize the fact that milk, more than any other single article of food, must be carefully watched because it very readily carries germs of diseases like typhoid fever and tuberculosis, and, secondly, because dangerous chemical changes may take place in a few hours.

The observation of a few rules like the following would save much sickness and many lives as has been demonstrated in Rochester and some other cities.

Show that in order to have pure milk: (1) Cows must be kept clean, have pure water, wholesome food, and well-lighted stables, be treated kindly and be milked by clean, healthy persons; (2) that all utensils in which the milk is kept must be scrupulously cleansed with lye or good soap and pure water, for, aside from the need of cleanliness, cases of typhoid fever have been known to arise from milk kept in cans or jars washed with water containing typhoid germs; (3) it must not be left exposed to air in which dust and hence germs may be floating, or where bad odors are present; (4) it must be free from preservatives like formalin which make it positively dangerous to children and invalids; (5) it must be kept cool, for microbes which in small numbers are harmless, multiply by millions when milk

is allowed to stand in warm places, and it becomes very unwholesome.

Give pupils directions for sterilizing milk suspected of containing germs. However, it should be made clear that raw milk when it is pure is much better than any which is sterilized even in the most thorough manner.

BEVERAGES

Of all summer beverages, pure, cold water is most satisfying and most needed by the system. Point out, however, that care must be taken not to drink copiously of very cold water when heated; to cool water by setting it on ice rather than by putting the ice into it; not to drink from streams or pools of brackish water; and to boil water that is suspected of being unwholesome. If boiled water is thoroughly cooled and aerated by being poured from one glass to another two or three times it will not be unpalatable.

Discuss the various refreshing temperance drinks such as oatmeal-water, fruit shrubs, lemonade, fruit juices, etc.

Warn against so-called sweet ciders often on sale, most of which contain considerable alcohol (the Committee of Fifty found from 3.6 to 8 per cent. of alcohol in the so-called sweet ciders of a certain city). If cider is made from wholesome apples and immediately canned boiling-hot as fruit is canned it will keep indefinitely, as long as it remains sealed and if drunk immediately upon being opened, makes a delightful drink. Similarly, grape juice is satisfying in every way.

Make it clear to the class that all *home-made beers* if made with yeast and fermented, contain alcohol. By questioning the class as to the method of making these drinks, it will be easy to demonstrate this fact and also that the alcohol, though less in amount than in lager beers and ales, is of the same nature and capable of creating a narcotic craving.

ACCIDENTS

In view of the number of deaths from *lockjaw* every July, it may be well to speak of the danger from the use of toy pistols and of careless handling of fire-crackers and explosives. Explain that wounds received from these sources frequently result in lockjaw because the germs of this disease gain entrance to the flesh with the bits of foreign matter and find their most favorable place for growth in wounds of this kind. Show that any such wounds should be opened and cleansed to the very bottom with some good antiseptic. The immediate at-

tention of a physician should be secured except in the most trivial cases. Of course, similar care should be exercised in the case of all punctures or wounds.

Review *first aid* directions especially those relating to (1) the care of sprains or broken bones, or of bleeding from cuts, when some distance from medical help; (2) resuscitation from drowning* impressing the class with the fact that alcoholic drinks are not true stimulants and would better be replaced by strong hot coffee; (3) the difference between sunstroke and heat prostration and the treatment of each.

Impress the class with the fact that alcoholic drinks so far from "keeping the heat out" actually predispose to sunstroke and heat prostration as has been demonstrated in army campaigns and in large cities where drinkers were the first to succumb (Hewes).

The simplest and most efficacious treatment of poisoning by ivy, etc., is to poultice the affected parts with anti-phlogistine. This treatment allays the distressing irritation and appears to draw out the poison thus shortening the period of suffering. If anti-phlogistine is not available, clean, moist clay may be used, changing the dressing when it dries.

Wounds due to the bite of poisonous snakes, or to dogs suspected of being mad, should be cauterized immediately, and a physician called.

NOTE.—Woodhead and others say that alcohol is not an antidote for snake-bite and recovery is slower when it is used.

SUMMER PESTS

Vermín, like rats, fleas, mosquitos and flies, were formerly considered as merely disagreeable or destructive of property, but they are now known to be dangerous to life and health, and they ought therefore, to be exterminated. However, since these facts have not been widely understood, it seems desirable to mention them with other points of hygiene.

While *rats* and mice may do some small service in consuming waste food, they are filthy and do harm by partly destroying food and leaving it to decay in inaccessible places. Moreover, they have been suspected of disseminating scarlet fever in some cases. Rats and fleas are believed to be responsible for spreading the bubonic plague.

Mosquitos are entirely noxious, but may be exterminated by persistent work. Show pictures of each and discuss the appearance, habits, and methods of destruction of the three commoner sorts: the *culex*, which is chiefly hateful because in many places it spoils the charm of outdoor life or makes it unendurable, thus actually lowering the price of property; the *anopheles*, or malaria-bearing mosquito, which is believed to be

*Persons should avoid bathing directly after a hearty meal, lest cramps result and life be lost.

responsible for malaria in human beings; and the *stegomia*, which is the one and only agent by which yellow fever is communicated from one person to another. All these may be eliminated by the same means, namely, the depriving them of breeding places by doing away with every little pool of standing water, even if it is so small as to be contained in an empty tomato can, and the spraying of larger ponds with kerosene or crude oil about once a fortnight. Ask one pupil to read and report the account of the fight with the *stegomia* and yellow fever in New Orleans (*McClure's*, June, 1906), and others to report on the fight with malaria in the Canal Zone, etc.

The "*deadly*" house-fly, an unclean pest of "appalling prolificacy" (a single fly lays about 120 eggs, which in ten days become mature insects ready to multiply in the same ratio) and of "disease spreading habits" is what recent writers have called the common fly.

First, it is filthy, for it generally breeds in horse manure or human excrement and often feeds upon the latter as well as upon diseased or dead flesh, sputum, offal. Cats and dogs, are far from clean in all their habits but they are generally kept in their place, while the fly is frequently tolerated, crawling over hands and faces, falling in the milk, walking over sugar and salt, and contaminating everything it touches with its filthy feet and proboscis.

But if the house-fly is shocking as a filthy purveyor, it is positively dangerous in its role of disease-germ carrier. Its feeding habits take it to the very places where germs of typhoid fever, Asiatic cholera, dysentery, and tuberculosis abound. Its basket-like proboscis, and its feet fitted with microscopic hairs are admirably adapted to catch and retain these germs. If after visiting these sources of disease, the fly presently walks over food or feeds upon it, some of these germs are certain to be dislodged and, under favorable conditions to multiply by millions in a few hours.

From laboratory experiments it seems probable that a fly once contaminated with the typhoid germ may retain this germ in a living condition for two or three weeks and, if transported, carry infection for considerable distances.

"Fly-spots" may also be dangerous, for living germs of both typhoid and tuberculosis have been found in the intestinal tracts of flies. During a period when typhoid fever was specially prevalent in Chicago, germs of that disease were obtained from five out of

(Continued on page 160a.)

School Physiology Journal

Single Subscription.....\$0.50 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

A JUNE MORNING

"What magic flutes are these that make
Sweet melody at dawn,
And stir the dewy leaves to shake
Their silver on the lawn?

"The dreaming lilies lift their heads
To listen and grow wise;
The fragrant roses from their beds
In sudden beauty rise:

"Enraptured, on the eastern hill,
A moment, halts the sun;
Day breaks; and all again is still:
The thrushes' song is done!"

THE TEACHER'S PLACE OF HONOR IN TEMPERANCE PROGRESS

AN educational contemporary remarks that the singular fact about the present wide-spread movement against the saloon in the United States is that it "is not being fathered or fostered by any one political party or by any one Christian denomination. It is largely a citizen movement in which men of every political stripe and of every religious faith are co-operating".

It is even more singular that an educational journal, of all others, should not recognize the relation to recent events in temperance progress of the fact that for twenty years the schools quite generally have been teaching the rising citizens of America "without regard to political stripe or religious faith" the truths about alcoholic drinks which show why sobriety exalts a nation, and why the saloon is a public evil.

Other forces have done a tremendous work of education and of crystallizing sentiment when formed, but the public school is the only agency which has been reaching all classes of citizens, laying that foundation of knowledge which is invariably the basis of effective action, for it is a psychological truth that a man must be moved before he will act, and that he must *know* before he is moved.

The teacher rarely may be able to point to results of his temperance teaching and say, This or that individual act is due to my ef-

forts, but it does not follow that he has accomplished nothing. The silent almost unconscious shaping of public opinion by facts taught and influences exerted in the schoolroom is as truly the teacher's noble share in the present temperance awakening as is the more conspicuous work of securing temperance legislation.

The boys who received the first temperance lessons in the schools a quarter of a century or more ago are in the prime of life and its activities today. Some of the boys of even a decade ago are already voters. Thousands of them in hamlets and cities and towns all over the nation are exercising the right of intelligent citizenship in declaring at the polls that the saloon and its evils must go. If there was ever a great movement of moral progress in America which the conscientious teacher could justly feel a personal pride in helping bring to pass, it is this.

In the teacher's hands, too, largely rests the hope for the future. Temperance education in all its forms must not only be continued; it must be reinforced by a wider acquaintance with the facts, by a sympathetic study of the necessary practical methods of instruction, by a deeper appreciation of the responsibility of the school in saving the boys and girls of the nation to intelligent sobriety.

A great essential is breadth of vision. The teacher who looks out beyond the sometimes narrow circle of his immediate influence gets a better perspective of his work, sees it in its true relations and the life of the larger world, catches the inspiring and prophetic vision of the far-reaching influence possessed by him who plants and nurtures a seed of truth in the heart of a child, and feels the throb of enthusiasm of teachers in all nations who are pressing into the highway of temperance education which thousands of earnest American teachers have trodden as pioneers.

THE May issue of the JOURNAL contained editorial comment as to drink as a probable cause of much of the crime and physical and mental deficiencies which were said at the New Jersey Conference of Charities and Corrections to be overcrowding the public institutions of the state.

The New Jersey legislature has now taken the matter in hand, and has authorized the appointment of a commission of not more than nine members to investigate the causes of dependancy and criminality, and to ascertain the extent to which excessive use of alcoholic drinks or other narcotics is a contributory factor. An appropriation of \$10,000 is provided for the expense of the inquiry.

SOME OBJECTIONS CONSIDERED

BY WALTER N. EDWARDS, F. C. S.

1. It has been objected that the plea for the teaching of hygiene and temperance as an obligatory subject is simply a covert attempt to introduce into the schools a temperance propaganda.

In reply to that, it must be observed that this teaching is asked for only on national health grounds and not for the purpose of any movement, and that, if such teaching be given, there is no need for the teacher to depart from his strictly professional and educational methods. There is no occasion to introduce into the lessons any such words as brewer, distiller, saloon, temperance society, Band of Hope, pledge or any of the phraseology common to the temperance platform. What is asked is that the facts relating to alcohol and health be taught just as any other scientific facts might be taught. Teach the facts, and leave it to the ultimate judgment of the boy and girl to apply them as they choose when they emerge from the school into the wider sphere of life.

2. It has been said that the schoolmaster is the prey of every faddist and this is the only an illustration of the faddism. That, however, is not the view of the Board of Education. In the July (1907) Code the introduction contains some capital intimations to the teacher as to what elementary education is really intended to be, and among them, we find the following:

"The purpose of the Elementary School is to form and strengthen character... To teach the children to fit themselves practically as well as intellectually for life....To instruct them in the working of the simpler laws of health.... to lay the foundations of conduct.... to impart habits of industry and self-control....to help them to become upright and useful members of the community in which they live, and worthy sons and daughters of the country to which they belong".

The request that the teaching of hygiene and temperance be made an ordinary subject is in complete harmony with this instruction of the Board as to the scope of elementary education.

3. It has been said that in teaching the children about alcohol a reflection would be cast upon the parents who might be users of alcoholic liquors.

We may lay it down, as a general rule, that the teaching of the school must not be such as to weaken parental authority; but if

the outcome of the school is to be good citizens, with sound minds and healthy bodies, then the children must be taught to avoid many errors of the past. Children are taught the value of fresh air, but does that alter the fact that they will, in a majority of instances, go to homes where every window is kept closed? In teaching the child the value of fresh air, the teacher does not point out the ignorance or stupidity of the parent in keeping the windows closed but tries so to inspire the child with this idea that when she has a house of her own, she will take care to open the windows because she knows the value of fresh air. It is by such teaching that the habits of this generation will be improved in the next. The teaching in regard to alcohol is on exactly the same footing.

There does not seem to be any real obstacle in the way of this teaching being given regularly, persistently and constantly, but that of inertia. This obstacle can only be overcome by public opinion. It is, therefore, the duty of all who have the best interests of the children at heart to do their utmost to create public opinion. Let that public opinion speak sufficiently loud, and the Board of Education will instruct H. M. Inspectors to examine and report on the efficiency of schools in teaching these subjects; and when that moment arrives all other difficulties will vanish.—*British Journal of Inebriety*.

INTERNATIONAL CONGRESS OF TUBERCULOSIS

WASHINGTON, D. C., Sept 21-Oct. 12, 1908.

This Congress promises to be one of the great events of the year. The addresses by authorities of international reputation, and the great prize exhibits are public.

Of special interest to teachers, physicians and writers is notice of prizes for educational leaflets. The management offers a prize of \$100 for the best leaflet submitted in each of seven classes and in addition one gold medal and two silver medals are to be awarded in each class. For information regarding the Congress, or the prize exhibits or educational leaflets, address

DR. JOHN S. FULTON, *Secretary-General*,
714 Colorado Building,
Washington, D. C.

"Cease, cease to think and be content to be:
Swing safe at anchor in fair nature's bay;
Reason no more but o'er thy quiet soul
Let God's sweet teachings ripple their soft way.
Call not such hours an idle waste of time:
Land that lies fallow gains a quiet power:
It treasures from the brooding of God's wings
Strength to unfold the future tree and flower".

CIGARET SMOKING

BY T. D. CROTHERS, M. D.

IN the counting room of a large New York house, is conspicuously posted this sign: "The use of cigarets is forbidden; no business will be done with a cigaret smoker". In reply to an inquiry, the manager of the house said, "I have found by bitter experience that the cigaret smoker is the most degenerate of all persons I deal with. He is careless, reckless, untruthful, and utterly wanting in manhood and frankness, his brain is bewildered, and there is nothing before him, but rolling cigarets and taking a few puffs, and considering himself equal to any occasion. I don't know the reason, but the cigaret smoker is the most nervous, childish, faithless man, that we have anything to do with".

This experience is confirmed in many ways. Tobacco smoked in this form, is more poisonous, because the gases from the combustion and the nicotin are brought in close contact with the mouth, and absorbed at once; however small the quantity may be, it is more readily absorbed by the membranes of the mouth. When the combustion takes place at a longer distance from the mouth, the gases and nicotin condense into vapor and collect in the end of the cigar, or stem of the pipe. The smoke in passing a longer distance becomes less harmful, when it reaches the mouth. Small quantities of nicotin, and other gases from the combustion of tobacco, constantly absorbed, become a protoplasmic poison that accumulates, hence the peculiar depressive effect on the higher brain centers of memory, reason and consciousness. The observation of laymen that cigaret smokers have poor memory and are devoid of spirit, judgment and character is thus confirmed. Later excessive irritation with tremors indicates the damage to the co-ordinating centers. Examples are common of cigaret smokers turning to alcohol for relief and becoming inebriates of the worst kind.—*Journal of Inebriety*.

AN ENGLISH PHYSICIAN ON THE TOBACCO HABIT

BY R. BRUDENELL CARTER, M. D.

IHAVE a very strong belief that whatever a smoker may be able to do well, he would have been able to do still better if he had never smoked at all; but the accuracy of the belief does not admit of demonstration. We know, it is true, that tobacco is a powerful poison, that even a very moderate quantity of it, taken internally, would be fatal to an unseasoned adult, and that the first experience of smoking boys is by no means unchecked; but we are assured by the advocates of the drug that complete tolerance of its poisonous effects is soon produced by habit.



"Come forth unto the light of things; Let nature be your teacher."

Of this I can only express my doubt. We know that a tolerance of all vegetable narcotics is soon induced, at least in the sense that larger and larger doses are required in order to reproduce the original effect; but there are none, unless it be tobacco, in which tolerance even implies harmlessness. The rule is that all such agents which, when freshly introduced into the system, modify the functional operations of the nervous centers in some ageable way, end by producing structural degeneration of the tissues upon which their action is chiefly exerted. The easily acquired tolerance of morphia, of cocaine, or of Indian hemp, is only a natural step toward the degradation ultimately attendant upon their use.

The most important fact at present with

regard to a definitely injurious effect, traceable to tobacco is its tendency to produce blindness. Concerning this effect, forty years ago, I was myself somewhat skeptical, and wrote of it in the sense that I regarded the evidence as incomplete, but time and larger experience have placed the matter beyond the reach of doubt. In common, I believe, with every ophthalmic surgeon, I have now seen a great number of cases in which habitual smokers have suffered from a definite form of gradually increasing failure of vision, attended by characteristic symptoms dependent upon manifest changes in the optic nerves, and always curable, if taken in time, by the total abandonment of tobacco, but always leading to complete and hopeless blindness if tobacco in any form were continued....

There seems much reason to believe that tobacco, which is known frequently to produce chronic inflammation of the optic nerves, may exert a similar influence on other portions of the nervous system, and may lead to nerve degenerations of other kinds, possibly to some the causes of which, are still unrecognized.—*Cornhill Magazine*.

ABATING THE CIGARET NUISANCE

THE whole matter of dealing with the tobacco question is a difficult one because so many fathers use the narcotic, but it is far from being as hopeless as it might at first appear, for most parents are opposed to their boys forming the habit, and there is much that can be done by the teacher as the school year is closing to deepen the good impressions that may have been made, and to encourage the boys in a determination not to begin the habit.

If the different classes have not each had one or more special cigaret lessons, be sure to get such lessons in before vacation when long idle days give opportunity for learning the habit.

But doubtless the class has had one or more lessons on this topic. If so, review them carefully, bringing out and emphasizing the main points such as the effects of cigaret smoking, particularly of inhaling, upon the lungs, heart, nervous system and the organs of special sense; show how impaired respiration, nutrition and circulation hinder growth and strength and how these effects together with those on the brain injure mental capacity and moral power. Mention the various lines of business from which cigaret smokers are barred out, and impress the boys with the fact that whether they wish to excel as athletes, scholars or business men the cigaret

habit, will lower their chances of success.

If there are some who have already contracted the habit, deal kindly with them individually, and if it seems wise, speak tactfully with their fathers suggesting how the boys may be helped to overcome it.

Many teachers are so placed that they are able to help the boys during vacation. One teacher who found that out of a class of 56 boys 32 used tobacco, hit upon the plan of forming a boys' club or brigade. He gathered them together one evening each week and entertained them with interesting stories selected with special reference to the tastes and needs of boys. These included tales of adventure, stories of animals, and of boys who had done heroic deeds or succeeded in difficult undertakings.

When an opportune time came, he read stories, showing how the use of cigarets or tobacco spoiled good chances for success in various lines of activity, and finally, of an Anti-Narcotic Society. They became interested in this and when a number of them eventually pledged themselves to break off the habit and succeeded in doing so, he felt amply repaid for all his effort.

Boys are the stuff from which men are made; the material is now plastic and easily shaped into noble and enduring form, but it is fast hardening and when once the mold has set, the teacher's opportunity for this high service has passed.

INTERESTING REVIEW METHOD

IN reviewing the various subjects of physiology try the following method: Suppose for instance, the subject to be reviewed is the heart and circulation. Give to each pupil in the class a piece of paper which will fit into the palm of his hand. On this write a topic such as "The heart", "The corpuscles", "Germicidal power of the blood". Tell the children that each is to look up his topic carefully and write on his paper four or five heads (comprising the main points to be brought out) for the next lesson at which time all may "make believe" they are public speakers. The topics with the heads are the speaker's notes; the class and teacher are the audience. By taking her place with the children the teacher lets each child feel that he has the floor and need not expect any assistance from her. As the several speakers present their subjects from the floor the audience may express approval of any particularly well rendered speech by clapping. Children enjoy this pleasant and profitable exercise.

Early to Bed and Early to Rise

By Ethel M. Mills

REST AND SLEEP—LESSON STORY FOR PRIMARY GRADES

TINKLE, tinkle, tinkle", rang Mrs. Howe's silver bell from the shaded porch and with rather slow feet Irving and Dorothy left their pleasant game and came up to their mother's knee. "My dears", she said, "the clock is striking seven and it is time for us to leave our play and have our bedtime stories."

"Oh, Mamma", said Irving who felt himself quite a big boy, "just babies go to bed so early. We aren't babies any more for I am eight and Dorothy is seven. Is it real necessary for us to go so early?" Irving liked to use big words and "necessary" was a nice long one he had just learned.

The dimple in mamma's cheek came in sight but she answered him quite seriously. "Yes, dear, I think it is 'real necessary'. Tomorrow I want you to notice carefully all the different things you do. At bedtime we will talk it all over and see if we can find out why plenty of rest is necessary. Tonight I am sure that you will continue to believe that your mother knows what is best for you and go to bed cheerfully as usual." Then she read them the usual bedtime story, kissed them good-night, and they scampered off to bed.

In the morning when the sun's jolly face shone in at their windows and said as plain as day. "Come children, get up", they scrambled out of bed and before they went to school, Dorothy watered the plants for Mamma and Irving brought a fine boxful of wood.

At school they learned their lessons and played hard at recess.

When they came home from school they had the best time of all, for Mamma had planned to take them and Fido for a long walk in the fields. After they had put on what they called their garden uniforms they started off merrily. How they romped with Fido and chased the butterflies, and what quantities of spring flowers there were.

Down in a hollow the children found some dainty, sweet violets hiding under their green leaves and their mamma carefully pulled up a violet plant so they could see its roots. She

told them that these roots were like so many mouths which sucked food and water out of the earth and made it into sap. The sap flowed up through the stems so the leaves and flowers would grow and the sun helped by giving his warmth and light.

"Is that the way all the flowers grow, Mamma?" said Irving.

"Yes, nearly all of them", said Mrs. Howe. "If plants are to grow nicely and give us flowers and fruit, they must have food and water and sunshine. Many, like the violets, also have a resting-time for they sleep through the winter months and are larger and stronger when they wake up in the spring".

Dorothy set the plant back in the earth saying, "Thank you pretty violet for your story. Some day we will visit you again."



IRVING and DOROTHY

Near where the violets were growing was an old apple tree and on one of its lower limbs where the sunlight slanted in was a robin's nest. How delighted the children were but they kept still as mice that they might not scare the old robins. Pretty soon they saw the mother-bird fly to the nest and five babies put up their mouths to be fed. Several times they watched her feed them and fly away to get more food. What hungry children these were to be sure.

Mrs. Howe told Irving and Dorothy that for the next three weeks the robin parents would scarcely do anything else but feed the little birds. Every night as soon as the sun went down Mrs. Robin would tuck her children into their little nest-bed and for blankets she would spread over them her own soft

feathers. At the first peep of dawn they Irving and Dorothy could hardly bear to leave the robins but the sun was getting low so they said "Good-bye" to the Robin family, called Fido and went skipping home.

When the hour for bed-time came, Mamma settled herself in her low rocker with the children on hassocks close by. First, they talked about what they saw in the fields and she asked Dorothy how the violets grow.

"I can tell", said Dorothy, "they have food, water and sunshine, and rest all winter."

"That is a good answer", said Mamma. "Irving may tell how the baby robins get large and strong."

"They have food and sunshine, and stretch in the nest, and—and they go to bed early", said Irving.

"Quite right", said Mamma. "Now let us see what you have had today."

"Why, it's 'most like the little birds", said Irving. "We have had food and water, and exercise and sunshine, and we go to bed pretty early, too."

"Isn't it a lovely plan?" said Mamma. "We might say that God has three kinds of children—His plant children, His animal children (the birds and fishes are animal children, too), and His human children, and He takes care of them all in much the same way.

"If they are to grow large and strong to do the work He has for them in the world, they must have good food and water, and sunlight, and the animal children and the human children must have exercise and plenty of rest besides.

"Think of all the different things you have been doing today. You worked at home this morning and you studied and played at school. Then we had our fine, long walk, so you see you have used all the parts of your bodies, and your heads. Tonight you are tired because your bodies wore out a little bit just as anything else does when it is used a great deal. We need plenty of good food and a long rest at night to make up what is worn out in the daytime. If our bodies wear out faster than they get mended at night we are sure to be sick."

"But I don't see why children have to sleep so much longer than grown people. Why do they, Mamma?"

"I will ask you two questions and then see if you can't guess. Are your papa and I any taller than we were a year, or two years ago?"

"Why no, Mamma."

"Are you and Dorothy any larger than when you measured on the wall a year ago?"

"Of course we are. We grew a whole inch

last year", said Irving proudly.

"Well then, can't you tell why children need to sleep longer than we do?"

"Is it because we are growing larger and taller, Mamma?"

"Yes, when persons have stopped growing they need just enough sleep to get the worn-out parts mended but children need to sleep at least two hours longer than grown people so they can grow large as well as get their bodies rested and mended. And now", said Mamma, "how many think it necessary for children as well as baby birds to get lots of restful sleep. Everyone here I think, for I see all hands are raised. I will read you this pretty poem and then we will start for Slumberland."

GROWING

"A little rain and a little sun,
And a little pearly dew;
And a pushing up and a reaching out
Then leaves and tendrils all about:
Ah, that's the way the flowers grow.
Don't you know?"

A little work and a little rest,
And lots of mother-love;
A twittering beak and a fluttering wing.
Then sky to skim and a song to sing:
Ah, that's the way the birdies grow.
Don't you know?"

"A little work and a little play,
And lots of quiet sleep;
A cheerful heart, and a sunny face,
And lessons learned, and things in place:
Ah, that's the way the children grow.
Don't you know?"

NOTE—The preceding story will be found particularly appropriate to the season, and helpful in presenting the subject of ample rest for children. Read or tell the story and question until the desired points are clear. Clinch the lesson by having the children commit the poem.

THE OFFICIAL BOOK OF THE EMMANUEL MOVEMENT

This book, *Religion and Medicine*, illustrates how an alliance between the highest neurological science of our time and the Christian religion in its primitive and simplest form, as modern Biblical scholarship has disclosed it, may become a powerful weapon with which to attack the causes that lie behind the neurotic and hysterical temperament that characterizes the life of today. Written by Elwood Worcester, D. D., Ph. D., and Samuel McComb, M. A., D. D., scholars in scientific theology, and Isador H. Coriat, M. D., an expert in psychological medicine, it is invaluable to doctors, ministers and reformers, and also to sufferers from nervous diseases. We regret that lack of space this month makes it impossible for us to quote from this excellent work but we hope to do so in succeeding numbers. Published by Moffatt, Yard and Co., New York. Price, \$1.50.

CONTENTS OF VOLUME XVII

September, 1907—June, 1908

AUTHORITIES

Achorn, John W.	4
Backman, Dr.	52
Barr, James	52
Bergmann, Johannes	118
Bergmann, Paul	35, 142
Bergstrom, John A.	41
Billings, Dr.	144a
Blocher, H.	39
Brunon, Dr.	141
Bunge, G. von	133
Chittenden, Prof.	141
Clouston, Dr.	144a
Corwin, R. W.	103
Cushny, Arthur R.	23
Crothers, T. D.	91, 98
Forel, August	23, 39
Gabrilowitsch, Dr.	122
Gruber, Prof. von	14
Hall, W. S.	81
Henhede, Dr.	101
Herter, C. A.	41
Hillier, Prof.	143
Higley, G. O.	78, 112
Hoppe, Dr.	32
Horsley, Sir Victor	14, 23, 32, 51
Hunt, Reid	16
Hunziker, Hans	133
Hutchinson, Dr.	23
Kassowitz, J.	129
Kassowitz, Max	110
Kelynack, T. N.	97
Knopf, S. A.	122
Krapelin, E.	39, 106, 144
Kress, D. H.	70
Laitinen, T.	36, 142
Legrain, Dr.	23
Leuzmann, Dr.	122
Liebe, George	121
MacNicholl, T. A.	144a
Madden, John	32, 109
Newton, Richard C.	5
O'Gorman, P. W.	39
Popert, Herman	142
Riley, W. H.	141
Rosenthal, J.	38
Rudin, Ernst	14
Saleeby, C. W.	21
Sharpe, Gordon	39
Seaver, J. W.	23
Sturge, Mary	14, 32
Sullivan, W. C.	143
Taylor, E. Claude	1
Woodhead, G. Sims	8, 38

BOOK NOTICES

Alcoholism, Psychology of : Cutten	112a
Biology : Millman	160a
Biology, Elements of : Hunter	160a
Chicken Little : Pratt	64a
Child Life and Education, Aspects of : Hall	64a
Classroom Management : Bagley	32
Diction, Faulty :	145
Dictionary, Webster's New Standard : Roe	96a
Drink Problem, The: Kelynack	14
Father and Baby Plays: Poulson	64a
Folks, Our Little: Cassino Co.	80a
Health, Good, for Boys and Girls: Brown	145
Health Through Self-Control : Spinney	96a
Human Body, Alcohol and: Horsley and Sturge	14

Hygiene : Notter and Firth	112a
Lamb, Mary's Little : Foster	64a
Reader, Carpenter's Industrial	112a
Riddle Rhymes : Pratt	64a
Religion and Medicine: Worcester, McComb, Coriat	158
Schoolroom, Hints and Helps for the : Griffin	32
Sheila, Dear Little : Pratt	64a
Studies in Experimental Alcoholism: Hunt	16
Tables on the Alcohol Question: Stumpf and Willenegger	96a
Teacher, The Making of a : Brumbaugh	32

EDITORIALS

Asset, A National	74
Beginnings	8
Christmas, The Heart of	55
Cigaret Using—Whose the Responsibility	55
Confidences, A Few	26
Hygiene and Social Education	90
Kein Warum Ohne Darum	90
Knowledge, The Effective Kind of	123
Leaders or Stragglers	40
Life or Existence	104
Penology, Preventive	123
Plumb, Rev. Albert H., D. D.	74
Shall Temperance Instruction be Social	137
Progress, Teacher's Place in Temperance	153
Strength of Ten, The	90
Study of the City, A Comprehensive	123
Subject, A Popular	8

LEADING ARTICLES

Abstainer, Why Every Young Man Should be a Total: Hanly	65
Campaign Against Alcoholism, Modern Civilization and the : Bergmann	113
Germany, Scientific Temperance in : Evert	145
Hour, The Opportunity, The Man, The: Stoddard	49
Man of the Twentieth Century, The Young: Jordan	33
Reformation, Social Service and the Temperance : Stoddard	17
Teacher, the Doctor, and the Alcohol Problem, The: Kelynack	97
Temperance Instruction, The Scientific Foundation of: Kassowitz	129
Temperance, The Necessity for Teaching the Principles of: Taylor	1
Tobacco, The Use of : Hall	81

MISCELLANEOUS

Aspects of the Drink Habit, Economic: Barker	134
Beer a Food, Is the Alcohol in: Forel	39
Cider a Harmless Drink, Is: Transeau	35
Causes, Getting Back of Surface: Transeau	133
Charities and Corrections, Preventive Pointers in: Corwin	106
Christmas Prayer for the Lonely: Van Dyke	49
Cigaret, Co operative Plan for Eliminating the: Wills	56
Cigaretist and His Cure, The: Ellsworth	132
Cigaret Fashion, Changing the: Lloyd	42
Cigaret Habit, English Physician on	155
Cigaret Habit in the High School, The: Hunt	116

Cigaret Habit, The Boy's	42	Greeting, Christmas	57
Cigaret Nuisance, Abating the: Wills	156	Greeting, Spring: Translated	120
Cigaret Problem, The	9	Growing	158
Cigaret Smoking: Crothers	155	Heroes: Greer	85
Cigaret Smoking, A practical Experience in: Crothers	98	June Morning: Sherman	153
Comparison of Food Values, Higley	112	Keep A-Goin': Stanton	31
Drunkenness, Gains that Result from: Vindangos	149	Lesson, The Pebble's	44
English Physician on the Tobacco Habit: Carter	155	Life's Harmony, Keynote: Klingle	1
Experiments, Important Recent: Hunt	16	Manhood	83
Fact and Theory	14	March: Jackson	101
Fallacy of the Occident, The: Saleeby	21	March	111
Fiction vs. Disinterested Facts, Commercial: Transeau	141	May	137
Fitting the Many to Survive: Jones	149	Menace of the Tower, The: Markham	81
Food Adulteration, Experiments for Detecting	110	Method, A Good	62
Habit Culture, Lesson in	4	Morning, Christmas	64
Hitting the Bull's Eye: Stoddard	38	Out in the Fields with God: Browning	5
John Ericsson's Plan, The Consummation of	37	Overtone, An: Hastings	111
Labor, The Dignity of: Arnold	136	Resolve: Wilcox	65
Letter from Little Known Country: Field	148	Self-Command	61
Liberty, the Boundaries of Personal	22	Servants, Baby's: Rogers	136
Life Waste Appalling	105	Song, The Children's: Kipling	34
Luncheons, School: McGuigan	91	Spirit, The Hero's: Eliot	42
Lungs, Development of the: Martin	128	Thanksgiving Day: Markham	33
Manifesto, A German Anti-Alcohol	78	Touch, The Human: Burton	40
Method, A Suggestive Review	156		
Narcotism, Treatment of Chronic: Crothers	91	REFERENCES	
Need He Have Died: Transeau	51	Alcohol	
Note of the Hoot-Owl: Transeau	26	A Poison and Narcotic	15, 109
Objections Answered, Some: Edwards	154	A Stimulant, Not a	21
Physical Renaissance, A: Transeau	5	As a Cause of Disease	39
Physician, A Self-Appointed: Transeau	84	Effects of on	
Physiology and Zoology, Modeling-Wax in: Witham	43	Brain	14, 141
Plumb, A Reminiscence of Dr.: Mowry	96	Cells and Tissues	23, 32, 39, 112
Prayers for No-Saloon, Answering Our Own: Hunt	124	Character	14, 16, 121
Physical Degeneracy, Logical Prevention of: Edwards	146	Digestion	39
Prize Offer, Mr. Pabst's	144a	Growth and Health	122
Publications Received by Scientific Temperance Federation	16a, 32a	Heart and Blood	39, 51
Race Degeneracy, The Tobacco Habit and: Kress	70	Mental Ability	14, 144a
Resolutions, Methodist	148	Muscles	38
Response, America's: MacNicholl	16	Nervous System	14, 30, 141
Results, Judging from: Transeau	100	Organs of the Body	16, 32, 39, 121, 122, 142, 143, 144a
School Hygiene, Importance of: Bergstrom	41	Race	15, 32, 113, 142
School, What We Do in Phillips: Marton	85	Resistance to Disease	32, 122
Schools Should Teach Hygiene, The: Herter	41	Working Ability	38
Scientific Temperance Federation, The Scientific Temperance Federation is Doing, What the	79	Food Value of	38, 39, 78, 112, 122, 130
Sparks from the Teacher's Anvil: Wills	62	Alcoholic Appetite	39, 142
Suggestions, Book: Lloyd	22	Crime	142, 143
Tobacco and Growing Boys: Thomas	85	Heredity	32, 113
Tuberculosis and Alcoholism, The Connection Between: Liebe	121	Tobacco	
Watchword, An America: Transeau	68	A Narcotic Poison	91, 116
Wine in Old Age: Thompson	149	Combating use of	14
		Effect of on	
POEMS		Brain and Nerves	70
Child, The: Oppenheim	97	Character	70
Conduct and Behavior, Questions, Turner	7	Growth and Health	82
Easter	113	Heart and Blood	70
Freedom: Markham	129	Mental Ability	81
		Organs of the Body	70
		Race	70
		Respiratory System	23
		Special Senses	82
		Tissues	23
		Tuberculosis	
		Effect of Alcohol in	23, 32, 121
		Effect of Tobacco in	70
		STORIES	
		Banker, Why George was not a	25
		Cider Lost its Charm for the Boys, How Sweet: Wills	45
		Closing of Santa Claus' Door, The: Warner	53
		Cousins, The Bad	138
		Crop, A Queer	76
		Early to Bed, Early to Rise: Wills	157
		Fishing Trip in the Mountains	147

Gift, Pansy's Mother's Christmas	17
How Johnnie Learned to Wipe His Feet	191
Legend, A Japanese	24
Story for the Primary Grades, A	
Guessing	44
Taking Chances on Life Itself: Wills	92
SUGGESTED LESSONS	
Advanced	
Seventh or Eighth	
Brain and Nerves	10
Summer Hygiene	
Tobacco	92
High School	
Alcohol the Great Destroyer	
of Individual and National	
Prosperity	148
Circulatory System	63
Nutrition	107
Respiration, Side-Lights on	23
Intermediate	
Fifth or Sixth Year	
Bread vs. Beer	76
Muscles, The	151
Respiration	125
Fourth Year	
Cider	45
Cigaret Lesson	138
Framework, The Body	103
Primary	
Third Year	
Blood and Circulation, The	118
Brain and Nerves, The	58
Habits	72
Skin and Cleanliness, The	6
Second Year	
Rest and Sleep	157
Senses—Hearing, The	102
Teeth, The	24
First Year	
Body, Parts of the	135
Food and Drink	87

(Continued from page 152.)

eighteen flies tested in a district where the sewage system was poor.

Hence it is clear that food which has been touched by flies is unwholesome if not infectious. Food of every kind, whether placed on sale in open booths or stores or kept in the home, should be carefully protected from insects, dust and rodents.

Have pupils observe the habits of flies and these other pests, read of them, and report in class. It will be found that horse manure, uncovered excrement, garbage, and sometimes damp cellars do not simply "attract" flies, but are breeding places without which the insects could not multiply.

Acting on these reports, discuss the best means: (1) of abolishing, screening, or covering these breeding-places; (2) of keeping flies out of homes and especially out of sick-rooms; and (3) of protecting food from all contamination. If, in the fall, when flies are about to seek hibernating places, as many as possible are caught by means of sticky fly-paper hung outside doors and windows, there will be few left to breed in the spring, and thus much work saved.

OUR BOOK TABLE

*Biology**. It would be hard to find a more complete and usable outline of Botany and Zoology than this inexpensive book by Miss Milliman. Following closely the New York Regents Course, it is valuable as an aid and guide to all teachers and pupils and especially those who may lack adequate preparation and who wish to prepare for examinations, or who wish to study without an instructor.

In *Elements of Biology*** the author has correlated the branches of Biology, Botany, Zoology and Human Physiology, following the laboratory method of presentation, and has furnished a volume which in many ways is suggestive and helpful.

The illustrations are unusually fresh and ample and the first two parts seem to be admirable. The third part, Human Physiology, has some excellent features, notably the natural correlation of the life-processes of human beings with those of plants and the lower animals. On the other hand the subject matter is somewhat disappointing inasmuch as it seems less ably and authoritatively written.

The matter relating to tobacco is accurate and adequate but that relating to alcohol is less satisfactory; e. g., the old alcohol-a-food theory, the harmlessness of moderate drinking, the fallacy that the alcohol habit is simply habit rather than a pathological condition often past control, etc., are discussed at length and bolstered up by quotations from text-books, most of which are seventeen or twenty years old and, hence, largely discounted in the scientific world. It is true that these are often followed by up-to-date scientific quotations showing the truth but as the pupils likely to use this book are only about fourteen years of age, they can not, therefore be expected to separate scientific truth from ancient error and it is both unpedagogical and unfortunate to ask them to do so.



We would remind our subscribers that the SCHOOL PHYSIOLOGY JOURNAL is issued only during the ten months of the school year from September to June inclusive, no numbers being published for the months of July and August. Subscriptions to begin with the school year should be received by August 15.

*BIOLOGY, by Clarabel Milliman, A. B., 96 pages, illustrated. Rochester, N. Y., Ball Publishing Co., \$50.

**ELEMENTS OF BIOLOGY by George W., Hunter, 445 pages, fully illustrated. New York, American Book Co.

ARE YOU A Primary-Kindergarten Teacher?



That is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the **ONLY HOUSE IN THE U. S.** putting up Kindergarten material especially for Primary Schools. If you will send for free catalogue now we will send you **FREE** of charge instructions for using Kindergarten material in primary schools, the regular price being 25 cts. Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.

WE SUPPLY

High-Grade Teachers for all Branches of Educational Work

THOROUGH investigation of records of candidates insure best possible service to employers of teachers. Methods broader in scope and more successful than any teachers' agency. Offices in 12 cities covering the entire country enable us to supply men or opportunities in almost any locality desired. Special advantages to male teachers desiring promotion or willing to consider opportunities in business or technical work. We guarantee to every applicant active and aggressive efforts. List of positions open, free if you write us today, stating age, experience and salary desired.

HAPGOODS

The National Organization of Brain Brokers

SUITE 144, 305 BROADWAY, N. Y.

1215 COMMONWEALTH TRUST BLDG., PHILADELPHIA, PA.

1015 HARTFORD BLDG., CHICAGO, ILL.

(Other Offices in other cities.)

German Temperance Literature.

The following leaflets are issued to help enlist our German people in the fight against the drink habit and the liquor traffic. They appeal to the Germans in their native tongue and on the lines which will most readily influence them. Help the cause by distributing them freely.

1. "The Bible and Total Abstinence." 32 pages, second edition; 5c each, 25c dozen, \$1.50 a hundred, postpaid; \$10.00 a thousand by express.
2. "The Germans and the Drink Question." 8 pages; 2c each, 10c a dozen, 50c a hundred, postpaid; \$4.00 a thousand by express.
3. "The Aims and Results of Prohibition." 8 pages, second edition. Same price as No. 2.
4. "Christianity and Prohibition." 8 pages. Same price as No. 2.

Send orders to J. G. EVERT, Hillsboro, Kansas.

NEW SCIENTIFIC TEMPERANCE LEAFLETS

PRICE PER 100

Social Service in the Temperance Reformation By Cora F. Stoddard, A. B.	\$2.00
Important Place of Physiology in the School Curriculum By Prof. F. M. Gregg, A. M.	1.00
The Problem of Americanizing One Million Immigrants Yearly By J. C. Jackson, D.D., Ph. D. . . . .	.75
Scientific Temperance in the First Six School Grades By Mrs. Annie W. Clark . . . . .	.30
Alcohol as it Affects the Brain and Nerve Tissue By Vaclav H. Podstata, M. D. . . . .	.75
Relation of the Drink Problem to the Perpetuity of the Nation By T. A. MacNicholl, M. D.	1.00
They Want Your Money (Popular Beer Leaflet) By E. L. Transeau. . . . .	.45
The Young Man and Tobacco By Winfield S. Hall, Ph. D., M. D. (Reprint of Article in February 1908, JOURNAL.)	\$3.00
Fresh, Attractive Powerfully Convincing Samples of Each, only \$1.10	

PRICE PER 100

International Course of Study, \$3.50
Recommended for use in elementary schools of Great Britain by the Committee representing 15,000 British Physicians. Used in whole or in part in several states, and many counties and cities of America. Complete for nine years.

Three Greatest Popular Books

— ON THE —

Alcohol Question

PRICE

Alcohol and the Human Body, \$1.65

By Horseley and Sturge, London

Psychology of Alcoholism, - \$1.65

By Geo. B. Cutten, B. D., M. A., Ph. D.

The Saloon Problem, - \$1.10

By Prof. J. N. Barker, Best All-round Book on Economics and General Aspects.

Combination Offers

Alcohol and the Human Body, \$1.65 } ONLY

or

Psychology of Alcoholism, 1.65 } \$1.80
Physiology Journal, one year, .60 }

The Saloon Problem, \$1.10 } ONLY
Physiology Journal, one year, .60 } \$1.40

Three Books and Journal, one year, } ONLY \$3.85

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull Street, Boston, Mass.

Please mention the JOURNAL when writing to advertisers.

Digitized by Google

June 1909 592
"A Modern View of An Old Social Compact"

—By Richard Frolich, M. D.

Rec'd
OCT 1 1908

B. P. L.

THE SCHOOL PHYSIOLOGY JOURNAL



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVIII. NO. 1
OCTOBER, 1908.

The Natural Music is Used by 58 Normal Schools

2 places having over	1,000,000 population
3 places having over	500,000 population
19 places having over	100,000 population
33 places having over	50,000 population
68 places having over	25,000 population
181 places having over	10,000 population
344 places having over	5,000 population
1,071 places having over	1,000 population

The smaller places using this system are
too numerous to mention here.

If you are not familiar with the series composing
this system, write to us for circular No. 782

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

Child's Book of Health. Revised Edition.

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

How to Keep Well. Revised Edition.

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition.

The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health.

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology.

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work.

GINN & COMPANY, Publishers

Boston New York Chicago London
San Francisco Atlanta Dallas Columbus

Three Greatest Popular Books

— ON THE —

Alcohol Question

PRICE
POSTPAID

Alcohol and the Human Body, \$1.65

By Horsley and Sturge, London
(Second edition not quite ready).

Psychology of Alcoholism, - \$1.65

By Geo. B. Catten, B. D., M. A., Ph. D.

The Saloon Problem, - \$1.10

By Prof. J. N. Barker, Best All-round Book on
Economics and General Aspects.

Combination Offers

Alcohol and the Human Body, \$1.65	} ONLY	\$1.80
Psychology of Alcoholism, 1.65		
Psychology Journal, one year, .60	} ONLY	\$1.40
The Saloon Problem, \$1.10		
Physiology Journal, one year, .60	} ONLY	\$3.85
Three Books and Journal, one year, }		

Write for prices on any other desired combination.

RELIGION AND MEDICINE

By WORCESTER McCOMB AND CORIAT.

The official book of the Emmanuel Church Movement.
Write for offer with JOURNAL.

CONTENTS

	PAGE
Modern View of an Old Social Compact	1
A Broader Motive for School Hygiene	3
Physique in College-Smokers and Non-Smokers	4
From the Viewpoint of a Great Physician	5
False Claims for Wine	6
Value of Education in Temperance Reform	8
Helping Foreign-born Children to Habits of Sobriety	9
Health's Decalogue	10
Gains in Hygienic Teaching	11
Sweden to the Front	11
Effects of Alcohol on Children	12
Temperance Program	13
Editorials	14
Story—Little Shepherdess	15
Alcoholism, in Wine-growing Countries	18
Hygienic Drinking-cups	19
Influence of Beer upon the Use of Spirits in Germany	20
Biological Ethics	21
Grammar Lesson—Cleanliness—Fourth year	22
Alcohol and Tuberculosis	23
Solving the Perennial Problem	24
High School Lesson—Body at Work	25
A Great Athletic Victory	26
Primary Lesson—Exercise and Rest	31

The Best Yet!

New Wine and Beer Leaflets

False Claims for Wine

Wine a Peril to Childhood

Wine Does not Drive out Drunkenness

Alcoholism in Wine-growing Countries

Commercial Fictions vs. Disinterested Facts
about Beer.

Prices very low — Send \$.05 for samples

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

Digitized by Google

School Physiology Journal

Vol. XVIII

BOSTON, OCTOBER, 1908

No. 1

The Ideal

By Katherine Lee Bates

By the promise of noon's blue splendor
In the dawn's first silvery gleam,
By the song of the sea that compelleth
The path of the rock-cleaving stream,
I summon thee, recreant dreamer,
To rise and follow thy dream.

At the inmost core of thy being
I am a burning fire,
From thine own altar—flame kindled,
In the hour when souls aspire;
For know that men's prayer shall be answered
And guard thy spirit's desire.

That which thou wouldst be thou must be;
That which thou shalt be thou art;
As the oak, astir in the acorn,
The dull earth rendeth apart,
So thou, the seed of thy longing
That breaketh and waketh the heart.

I am the drawn-sword barring
The lanes thy mutinous feet
Vainly covet for greenness,
Loitering pace or fleet,
Thine is the crag-path chosen,
On the crest shall rest be sweet.

I am thy strong consoler
When desolate human pain
Darkens upon thee, the azure
Out-blotted by rush of the rain.
All thou dost cherish may perish;
Still, still shall thy guest remain.

Call me thy foe in thy passion;
Claim me in peace for thy friend;
Yet bethink thee, by lowland or upland
Wherever thou wiltest to wend,
I am thy Angel of Judgment;
Mine eyes thou must meet in the end.
—Exchange.



A MODERN VIEW OF AN OLD SOCIAL COMPACT

BY DR. RICHARD FRÖLICH, VIENNA, AUSTRIA

In the last few years the nature of the temperance movement has changed very decidedly. Formerly, from sheer ignorance of the effects of alcohol in all forms, it was only the alcoholism of distilled liquors that was looked upon as a devastating disease, while wine and beer were regarded as utterly harmless, or even as a wholesome and necessary article of diet. Beer was prized as a substitute for liquor.

DEMORALIZATION OF THE DRINK HABIT

If there were only the alcoholism to combat which comes as a result of wretched standards of living, there would be little to justify a direct crusade against alcohol. Those people would be entirely right who say: "Organize and organize again and again, for only so will you create the necessary condition for every step of mental and moral progress." But, as a matter of fact, there exists along with this alcoholism which is a direct consequence of poor standards of living, along with this craving for drink in its crass form, a sort of alcoholism which pervades all the strata of our society. That is the alcoholism which comes not from misery but from a custom of drinking which is practically universal at present. It is called the "moderate use" of alcohol, and is common to men in organizations and outside of them alike.

Judged from the number of its victims as well as from its general influence, this form of alcoholism is of far greater importance than other crass and brutal alcoholism of brandy and whisky. It is sanctioned by the whole present generation, practically, without distinction of social rank. It is a danger all the more insidious because it does not manifest itself in the startling forms of drunkenness and delirium tremens, but claims its countless victims under the protecting shield of an indulgent public sentiment.

It is against this form of alcoholism that the new total-abstinence crusade is directed—this "moderate" alcoholism, which, like as not, results in the making of downright drunkards. This form of alcoholism we can attack directly at its roots: the social code of drink and the social compulsion thereto.

BEER AND WINE MOST DANGEROUS

Here I must devote a few words to the present condition of this "moderate" alcoholism among us. As things are today, the distilled liquors claim far fewer victims than beer and wine. In respect to the actual quantity of alcohol consumed, beer and wine are more dangerous to society today than strong liquors. In our city of Vienna, the alcohol put into the human system from the consumption of beer and wine is about double that

consumed in the form of brandy, gin, rum and whisky. Easily accessible statistics show that this form of alcoholism also has the greatest number of victims. Out of 1,525 patients treated for alcoholism in a hospital in Prague, only 119 were victims of strong liquor, while 845 (more than half) were victims of beer. Unfortunately, our statistics for Austria were not very full, and we can 60, die from the effects, direct or indirect, of the evils of alcoholism. But in Switzerland, where for several years a careful record was kept of alcoholic patients, both in the hospitals and in private sanitariums, the statistics show that one in every ten adult males, and one in every six between the ages of 40 and 60 die from the effects, direct or indirect, of alcohol. And in the regions where the real "natural wines," so highly prized as wholesome, are drunk, the number of victims rises considerably. The Swiss cities have certainly no higher rate of consumption of alcohol than Vienna!

DISEASE AND DEATH

But these statistics give only cases of deaths from alcoholism. Of the incapacity for work, the misery in the family, the neglect of children, the brutalization of every sort caused by alcohol, these figures say nothing! An idea of the miserable conditions of the victims of alcohol may be formed by pondering on the fact that, with the exception of tuberculosis, no disease that afflicts our people causes such havoc as alcohol. And it is important to note here that only one in ten of the deaths due to alcohol are cases of delirium tremens—that conspicuous form of alcoholism! It is an alcoholism which generally is not called "alcoholism" at all, that has for its victims one-tenth of the male population of Switzerland. And to all this we must add the enormous weakening of the power of resistance to disease germs of every sort which alcohol causes. There is scarcely an infectious disease, tuberculosis included, that does not attack and carry off a man whose system is alcoholized, more quickly than a man whose power of resistance has not been weakened by drink.

We must recognize the fact that it has been the medical investigation of the last few years that has proved that the little derangements (often not noticed in their beginnings) which are caused by alcohol even taken "moderately," grow, with the accumulated quantities of years, into the most serious alcoholic diseases. A proof is furnished in the shorter average length of life among "moderate drinkers" as compared with total abstainers.

We Austrians, further, as compared with the Swiss, must realize that a great many factors are at work in our society which hasten the destructive process begun by alcohol—factors which are negligible in highly civilized Switzerland, where better wages, better housing, better food all tend to counteract the evil effects of alcohol. That is an added reason why we should take up the crusade. Just because the forces making for degeneration are so numerous and so active with us, we have double the call to eliminate at least those of which we are masters today.

ALCOHOL DANGEROUS TO YOUTH

Again, the question of alcohol is of tremendous moment for its influence on the youth. I suspect that not even the most sanguine of us agitators thinks that we shall be able to realize our whole program here in Vienna. Many generations of our descendents will have to continue the fight; and *ours is the duty of making the coming generations strong for that fight. The young are the greatest sufferers from the curse of alcoholism.* For it is not alone the man who drinks that suffers. The poisoned seed cells transmit the evil to his posterity. The children of drinking parents are the most susceptible to mental disorders; while between the children of drunkards and those of total abstainers there lie the hundred degrees of mental capability corresponding to the hundred degrees of that indeterminate thing called "moderate drinking." *If the laboring man wants to give his child the highest endowment for the battle of life, let him be a total abstainer!*

But alcohol also injures the young in that they grow up in an atmosphere of general drinking. Even school children are not free from the effects of alcohol, as nearly 90 per cent. of them use the liquor in some form or other. And the case is aggravated by the fact that the systems of children are much more susceptible to the evil effects of alcohol than those of adults.

MODERATE DRINKING CONDEMNED

If, then, the alcoholism which is the result of the general custom of drinking and the general condonation of the evil of drinking is such a menace to our society, it is equally true that the only way in which it can be successfully combatted is by giving the death blow to the custom. We must supplant the universal prejudice in favor of drinking alcohol by an universal prejudice against it. We must break the compact with alcohol. We must cease to regard every man as a "moderate" drinker so long as he is not under the

table—and even then to say “He didn’t stand it very well,” instead of plainly, “He is drunk.”

AN UNQUALIFIED INJURY

The popular prejudice in favor of drinking is still encouraged in large part by an old theory of the doctors (which happily is now being revised), that people need alcohol for every conceivable case; that it is a useful article of diet, that it furthers all kinds of labor, both mental and physical. The more scientific study of recent years has furnished us with uncontrovertible proof that alcohol, so far from being a nourishment, acts destructively on all the tissues of the body; that it is a hindrance to every kind of work; and that even in the “moderate” quantities of which we hear so much it is an unqualified injury. Our program has the support of the strictest scientific examination. Total abstinence is the only form of opposition to alcoholism that is able to stand the test of experience!—*Christian Socialist.*



IN California the wine, and in certain New England and other states, the cider (apple-wine) question is prominent. Hence we are glad to announce that the next JOURNAL will present valuable helps on those lines.



AUTUMN FANCIES

“Over the hills and over the meadows,
Over the elm where the waters meet,
Autumn is trailing her long brown shadows
And bronzing the tips of the grasses sweet.

“And out and away from the town, October
Tries his brushes on hillside brown,
Touches and brightens the landscape sober,
Out and away from the dusty town.

“Oh, the hills, and the brown, brown meadows!
Oh, the elm where the waters meet!
Oh, to rest in its cool, deep shadows,
Out from the town, ‘mong grasses sweet!”

“A BROADER MOTIVE FOR SCHOOL HYGIENE”

THE health of the child is the subject of serious consideration by many physicians and educators who realize the enormous physical, moral and economic waste of the violation of hygienic laws.

Hence, the comprehensive program for improving conditions by welding local, state and health systems into and national educational a working whole as outlined in the July *North American Review* by Mr. William H. Allen is of special interest.

The possibilities of so much good lie in the plan that it is to be regretted that the same author devoted an article in the June *Atlantic Monthly* to a criticism of the present school instruction with a view apparently to making it appear that deficiencies in the present system are due to the compulsory temperance instruction. The burden of the article is that teachers are “eager to explain the relation of health to efficiency, earning power and community welfare,” but that they “resent” a law that “forces them to teach as solemn truths what they know to be only partly and occasionally true, to consume time on subjects to which they can devote neither their heart nor their true educational efficiency.”

ARE THE TEACHERS THUS HANDICAPPED?

The question can best be answered possibly, by an abstract from a report on this subject of a committee of physicians appointed by the American Academy of Medicine in 1903. After three years and a half of careful personal study of the laws, text-books, courses of instruction in use in this subject, the committee said in its report (1905-6):

There are five chief methods by which the



“She will bring them all together,
All delights of summer weather
And the heaped Autumn’s wealth of
Ceres’ golden reign.”

public schools are directly teaching personal domestic and public hygiene including physiology and anatomy. These methods are:

1. Domestic science. 2. Physical training. 3. Biology (nature study) and science teaching. 4. *Medical inspection*, teaching prevention of ill-health, personal, domestic public. 5. *Physiology* and *Hygiene* with special reference to the effects of alcoholic drinks and narcotics upon the human system.

FREEDOM AS TO METHODS

In summing up the details of the federal and forty-five state laws the following observations were made:

1. No law states what shall be taught as to the nature and effects of alcoholic drinks and narcotics upon the human system.

2. No law prevents the teaching of temperance from an economic, moral, sociologic or other view-point than physiologic.

3. No law prevents the teaching of hygiene through domestic science, physical training, biology, medical inspection, or in other ways.

4. No law requires indorsement of text-books by the Woman's Christian Temperance Union.

5. Forty-two laws do not stipulate the space for temperance in text-books on hygiene; forty-three laws do not specify the number of lessons in hygiene (including temperance).

In other words: These laws leave ample openings for other text-books, methods,

teachings, to any interested in hygiene (including temperance for physiologic reasons) who *have the capacity* (italics the committee's) to take advantage of such openings to demonstrate better ideas.

LAWS NO OBSTACLE TO EFFICIENCY IN SCHOOL HYGIENE

From this report of the committee of the American Academy of Medicine it is evident:

1. That if the teachers desire to inculcate principles of public and private hygiene, or to teach it from the social as well as the physiological point of view, there has been for twenty-five years under the present laws ample opportunity for developing efficient methods of school hygiene, and, therefore, the laws may not justly be attacked on the ground of being a hindrance to such work.

2. That no law "forces teachers to teach what they know to be only partly and occasionally true."

No intelligent person would claim for a moment that further development of hygienic training and improvement of hygienic conditions is not needed or desirable. There is not a branch of school instruction or of social reform which is not undergoing constant changes in method. But we have no right to ignore or deny the opportunity which has been given in the past quarter century for developing effective hygienic instruction, and then to lay the blame of imperfect work upon the legislation which gave and still gives the opportunity for large usefulness to social health.

❖ ❖ ❖

The saloon can not be permitted to take precedence over the American school house.—Gov. Hughes.

PHYSIQUE IN COLLEGE SMOKERS AND NON-SMOKERS

BY E. L. TRANSEAU

SOME months ago the newspapers gave considerable space to data said to have been secured at Columbia University showing that the young men of the entering class who were smokers were "taller, stronger and heavier than the non-smokers." Inquiry by the JOURNAL, however, secured the information from the professor in charge of the investigations that no official report had been made and that most of the newspaper statements "originated in the minds of the reporters who wanted to make a sensation."

Unreliable as was the source of the statistics as given they did not warrant the

claim that they "proved that we were wrong in assuming that boys are stunted by the use of tobacco." The statistics were as follows:

COLUMBIA SMOKERS AND NON-SMOKERS

	Age		Height	Weight	Lung Capacity	St'gth
	yrs.	mos.	cm.	kg.	litres	kg.
Smokers	20	10	171.57	61.28	4.15	586
Non-Smokers	19	8	170.40	59.77	4.07	568
Difference	1	2	1.17	1.51	.08	18

Any but the most superficial reader would ask at once: How much gain may the nineteen-year-old men ordinarily be expected to make during the year and two months that

must elapse before they are as old as the smokers with whom they were compared?

AMHERST STUDENTS' AVERAGE GAIN

An approximate answer may be found in the records of Professor Hitchcock of Amherst, who was the first to elaborate a system of measurements for college students. A table of measurements taken at Amherst in 1877-78 (before the use of tobacco had become as prevalent as now) showed that the average gain in height between the ages of nineteen and twenty was .732 inch.; in weight 2.67 pounds; in lung capacity, 5.56 cubic inches.

If we add this average gain made by the Amherst students in one year to the present measurements credited to the Columbia non-smokers, expressed in the equivalent English weights and measures, the result shows that by the time these non-smokers are as old as the smokers they may expect to be one-quarter of an inch taller, and to have two-thirds cubic inches more lung capacity, weight about the same.

YALE STUDENTS' AVERAGE GAIN

A more strictly comparable set of figures, because covering the same period of time, one year and two months, at practically the same age—one month older—is to be found

in the following records of Yale students kept by Professor Seaver:

	Age		Height	Weight	Lung Capacity
	yrs.	mos.	cm.	kg.	litres.
	20	11	176.5	68.5	4.53
	19	9	173.0	63.5	4.22
Difference	1	2	3.5	5.0	.31

If this difference be taken as the average rate of growth for 1 1-6 years to be expected at this age, and be added to the present status of the Columbia non-smokers (according to the newspaper statistics), it would give them when they reach the age of the present smokers, an advantage over the latter of .94 of an inch in height, 7.69 pounds in weight, and 14.36 cubic inches in chest capacity.

The reports admitted that some of the superiority claimed for the smokers was due to the fact that they were older, but, evidently, the reporter did not figure out the measurements that would correspond to difference in age or he would have seen that the smokers were really behind non-smokers in bodily development.

Another important item of which no mention was made is, that according to the statistics published in the public press, it had taken the smokers on an average one year and two months longer to reach the freshman class than it did the non-smokers.

FROM THE VIEWPOINT OF A GREAT PHYSICIAN

BY G. SIMS WOODHEAD, M. D.

Fellow of Trinity Hall, and Professor of Pathology in the University of Cambridge, England

THE teetotaler is the product of the last seventy or eighty years—not because there were no total abstainers before this, but because it was only when men came to see the evils that were being wrought by drunkenness that they thought it necessary to enter a definite and formal protest against the use of alcohol by taking a pledge of personal abstinence, and as personal abstainers banding themselves together to wage war against what they believed was doing untold damage to a large section of our people.

As the result of the total-abstinence movement, a complete change has gradually come over the medical profession as regards their relation to the prescription of alcohol to their patients and its recommendation to healthy individuals.

When I say "a complete change," I do not mean that every medical man is now convinced that alcohol is injurious to health, and that it need never be given in disease; but it may be accepted that, with a few nota-

ble exceptions, medical men do not now believe that a healthy individual requires alcohol to keep him healthy.

ABSTINENCE AND INSURANCE

How great this change is may be best illustrated by the modification that has taken place in the practice of insurance companies.

In the early days of total abstinence, when alcohol was looked upon as one of the "necessaries" of life, a total abstainer applying for a life-insurance policy was told by the medical adviser of an insurance company that he could not take the risk of recommending for insurance at ordinary rates the life of a man who took no alcohol, and that consequently there must be an added premium of ten per cent. to cover the extra risk. Nowadays—to use a colloquialism—the boot is on the other leg.

Numerous sets of statistics have from time to time been published in support of the contention that alcohol is far less frequently

used in the treatment of special diseases than it was of yore. Those quoting these figures are, however, usually countered by such a statement as "Yes, but in other diseases this does not hold good; although alcohol is less prescribed for such and such diseases, it is far more frequently given in others."

A short time ago I obtained, through the courtesy of Mr. John MacPherson, the steward of the Edinburgh Royal Infirmary, a series of statistics which afford very strong evidence that—in this great institution, at any rate—the administration of alcohol in disease is falling very rapidly indeed.

I placed some of these figures before my colleagues of the British Medical Temperance Association; but the figures are of interest to others than doctors, as they show that the free use of alcohol in the treatment of disease is by no means necessary, as there are certainly more recoveries at the present day than there were in 1840, many other factors than alcohol, of course, contributing to this improved rate of "cures."

Whether we test the liquor bill of the Royal Edinburgh Infirmary by the amount, as represented in money, prescribed during the year, by the amount per bed, or by the percentage spent on alcohol compared to the total hospital expenditure, we find that there

is a very great difference between the amounts prescribed in 1840 and the amounts prescribed in 1906.

Thus the records show that in 1840, the percentage of the cost of liquor to the total hospital expenditure was 7.4 per cent.; by 1870 it had fallen to 4.4 per cent., while the next ten years saw it drop to only 1 per cent. In 1906, only 0.37 of one per cent. of hospital money was spent for any kind of alcoholic liquors.

It will be seen that there is not only a continuous, but a very great and rapid fall, and this in a hospital in whose service we have a large number of surgeons and physicians, and where consequently there is probably considerable diversity of practice.

However able the special pleading in favor of the use of alcohol may be, most people who have given attention to the question are agreed that, were alcohol banished from any community tomorrow, the average health of that community would not be impaired. It would be better nourished; it would do better work; there would be fewer cases of general physical and moral deterioration; the general physique would improve enormously; there would be less poverty, less crime, less mental disturbance, and much greater happiness.—*Christian Endeavor World*.

❖ ❖ ❖

There are two classes of philanthropists: one alleviates and the other cures. There is one class of philanthropists that undertakes when a man commits an evil to help him out of it. There is another class that endeavors to abolish the temptation. The first is sentiment, the last is Christianity.—Wendell Phillips.

❖ ❖ ❖

FALSE CLAIMS FOR WINE

CORA FRANCES STODDARD, A. B.

THE California wine-growers have resolved to educate the American people to the use of light table wines at their meals. To this end they are busily sending forth circulars which proclaim that wine is a food, stimulant, blood purifier, promoter of digestion and of temperance. Are these claims true or false?

Wine as a food substance. The food claim is ingeniously as well as adroitly worded. "The juice of the grape contains albuminous matter to nourish the brain, muscles, and nerves, sugar to warm the body, and organic salts for the bones and tendons."

This is true of "the juice of the grape"

before fermentation but not afterward. Over the changes produced by fermentation, the pen of the wine advocate bounds clear, and follows the above with the statement:

"Give a chemist a bottle of pure dry wine and have him analyze it for its properties. He will report from eighty-five to ninety per cent. water, balance alcohol, fruit acids, and organic salts."

But why not "albuminous matter to nourish the brain, muscles and nerves, and sugar to warm the body?" Because fermentation changes these food substances and leaves little or none of their nourishing properties; but of this, the wine merchant says nothing. As for the salts "for the bones and tendons",

they are too suggestive of the connection between wine and gout to pass for a recommendation.

If the wine-grower only would give us "the pure juice of the grape", unfermented, sterilized, containing the nutritious, God-given substances in place of the poisonous alcohol his fermenting process substitutes, he would be indeed a benefactor.

Wine as "the milk of old age." It leads to delay in excreting the wastes of the body, tends gradually to weaken the circulation and thus frequently causes a lowering of vitality, even when taken only in small amounts.¹

It tends to produce heart weakness, muscular pains and deterioration of the fine blood

must always be a menace to thorough and vigorous digestion by the saliva of starchy foods⁴, that is, bread, potatoes, cereals, etc.

The second stage of digestion takes place in the stomach. Prof. Chittenden's experiments showed repeatedly that an amount of wine equal to half a wineglassful at a meal slowed the action of the digestive fluids. Half a pint of sherry at a meal, Sir William Roberts found, trebled the time needed for digestion.

The third stage of digestion the pancreatic, takes place in the intestinal canal. Here wines, even more than the stronger alcoholic liquors, "strikingly" checked the digestion of nitrogenous foods⁴ the class to which the white of egg and lean meat belong.



"Then came Autumn all in yellow clad,
Laden with fruits that made him laugh full glad."

vessels.² In old age when the tissues of the body are on the down grade, alcohol in most cases merely hastens the process of decay.³

Moreover the alcohol in wine may be a cause of premature old age. "One of its characteristics is that it causes a gradual waning of the processes of wear and repair in the body. This waning is frequently so gradual that persons are often totally unaware of its occurrence, or that it is due to alcohol. If they think about the matter at all, they attribute their increase of weight, their shortness of breath and their lack of energy to the advance of age, being quite unaware that their 'middle age' is being hastened on by the use of alcohol, and, consequently that their term of life is really being shortened."³

Wine as "aid to digestion." A pet claim made for wine is that it aids digestion.

Not only alcohol but other substances found in wine hinder digestion so that wines as a class show a very powerful influence in checking the action of saliva in changing the starch of foods to sugar. Hence, Professor Chittenden of Yale University says that acid alcoholic beverages, especially the sour wines,

The use of wine to aid a weak digestion is a still worse mistake. Prof. Chittenden found that wine hindered a weak digestion even more than a vigorous one.

Wine as "an intoxicating drink." A third false claim is that wine "the fermented juice of the grape", is non-intoxicating. A beverage containing from eight to ten per cent. alcohol (the percentage given in the wine grower's circular), and even as high as twenty per cent., cannot, with the least shadow of truth, be called "non-intoxicating." The visible evidence in every wine-growing region contradicts it. The experience of every open-eyed abstainer who has watched the beginning of the effect of wine at a social gathering contradicts it. The skeleton in the closet of many a home where the one who should be king or queen has become a slave to wine contradicts the assertion that wine is not intoxicating.

Wine as a "blood purifier" is another claim as false as it is alluring. Nature's way of keeping the blood pure is by the activity of the cells that take up food and send out

waste. But the alcohol in wine checks the activity of the cells and thereby causes the poisonous products of body waste to remain longer in the blood than they otherwise would. The most effectual way of purifying the blood is by exercise, which keeps the cells active and the circulation brisk, by plenty of fresh air which brings in the oxygen the cells need to keep up their activity, and by good food from which they can obtain the material they need to build them up and keep them vigorous.

Wine as a "stimulant." A short time ago a scientist⁵ reported the results of some careful experiments by which he studied the effect of alcohol on one of the simplest forms of animal life—the little one-celled creature called the amoeba. He tried alcohol in solutions weaker than the weakest wine to see if it would cause the amoebae to move faster, if so, it would act as a stimulant. But it did not. It checked their motions at once and slowed their activity for a long time where it did

not permanently destroy the creatures.

Wine contains this same alcohol, and our bodies are composed of many cells similar to the single one which constitutes the amoeba. This recent experiment, therefore, adds another link to the chain of evidence going to prove that wine or any other liquor containing alcohol is no true stimulant.

The highest and best kind of stimulation is that which proceeds from an active mind glowing with a love of beauty and harmony and sympathy with all that is elevating and inspiring.

Wine is a foe to such stimulation, for it weakens the perception and judgment, and thereby lowers mental activity to a mere temporary, purposeless, undirected excitement, which soon gives place to dullness.

REFERENCES

- (1) Sir Victor Horsley.
- (2) Sir Thomas Barlow.
- (3) Prof. G. Sims Woodhead, Cambridge University, England.
- (4) Prof. R. H. Chittenden, Yale University.
- (5) Henry Kesteven, M. R. C. S., England.

VALUE OF EDUCATION IN TEMPERANCE REFORM

A RECENT article in the *Atlantic Monthly* says that it is "significant that in her list of Ethical Gains through Legislation, Mrs. Florence Kelley has not included any gain from anti-alcohol, anti-tobacco instruction." Possibly it was significant, but probably not for the reason the author seems to think since there are other observers of equal prominence who do recognize a gain from this teaching. May not the explanation of the omission be rather lack of realization of what has been going on in this field of social reform? That this is not impossible is shown in *Charities and the Commons* (January, 25, 1908), in an editorial written by Edward T. Devine, professor of social economy at Columbia University, who said:

"The present rising tide of prohibition has caught us, as it has many others, just a little unprepared. We had not realized, until by multiplying indications on every hand that millions of our fellow citizens so fully appreciated the gravity of alcoholism that they are at last taking effective steps to control it. A suggestion has been made that we are now fighting the evils of intemperance intelligently because we have seen come to the polls the first generation of voters who, in the public and private schools have been instructed systematically that alcohol is injurious. The drink habit is as bad as any

temperance agitator has painted it. Poverty and crime are in its train."

The same writer in *Charities and the Commons* under date of August 1, in naming influences at work included "the slower but more fundamental results of the persistent teaching in the public schools" as having had "a cumulative and in some particulars, a wholesome supplementary or even corrective effect."

The *Outlook* recently published an article on causes of the present progress in temperance reform by Dr. Samuel J. Barrows, who, in ripeness of years of observation and of practical experience in social uplift is perhaps as well qualified to testify as the author of the article under discussion. Dr. Barrows gave as "one reason for the silent, steady growth of temperance sentiment" the fact that systematic and semi-scientific teaching, enforced by moral and religious precept and example, organized and stimulated in the schools throughout the country by the W. C. T. U., together with its Loyal Legion and Bands of Hope has been going on for thirty-four years, and the result of this education has been telling in the boys and girls who have since grown to manhood and womanhood. A new generation has grown up and has found that alcoholic drinks are not necessary for health or happiness."

Let Us Laugh

By M. S. Whitacre

When we're feeling cross and snappy,
Let us laugh.
Let's be cheerful, bright and happy,
Let us laugh.
Laugh—and let the face be brighter,
Laugh—and let the heart be lighter;
Then the life will be the whiter—
Let us laugh.

When the world is frowning at us,
Let us laugh.
When our foes with venom spat us,
Let us laugh.
Spatting back is rather riling,
But there's nothing more beguiling
To an enemy than smiling—
Let us laugh.

When dire tribulations meet us,
Let us laugh.
Troubles laughed at won't defeat us,
Let us laugh.
Laughter's better far than whining—
Laughter is the silver lining,
Proving that life's sun is shining—
Let us laugh.

When the temper tries to lead us,
Let us laugh.
Merry hearts will heavenward lead us,
Let us laugh.
When our own "blue devils" bite us,
And endeavor to afright us,
Laugh! and they will cease to fight us—
Let us laugh.—*Suggestions.*



HELPING FOREIGN-BORN CHILDREN TO HABITS OF SOBRIETY

BY PROF. R. A. HARTMANN, M. D., LEIPSIC, GERMANY

SCARCELY any profession has so much reason to study the alcohol question seriously as the teaching profession. The use of alcohol by the young places a serious obstacle in the way of the teacher's endeavors, since it hinders not only physical development, but particularly mental and moral progress. It can not be doubted that the majority of teachers believe that the public schools do not exist simply for imparting knowledge, but for the development and training of character. The schools therefore, the lower as well as the higher, have the strongest reason for using all their influence to bring about a general recognition of the scientifically indisputable proposition,—Complete abstinence for the young.

CO-OPERATION OF PARENTS AND TEACHERS

It can not be said that this is requiring an impossibility of the schools, for although they have the pupils only a part of the day, they have a wealth of material for influencing the home as well, if teachers have but the will to use it. In fact, there is scarcely any other institution that has so strong and lasting an influence upon the parents. Parents desire the best welfare of their children, and one can be sure that the warning words of earnest conviction coming from the school will not be unheeded in the home, and the alliance of the home is essential if the reform is to be realized.

The campaign in the school will, therefore, lead to richer results if the parents can be

interested in the solution of the problem. The deeper the conviction in the teaching profession of the necessity of a thorough-going reform, so much greater will be the prospect of securing this interest. Since the school and the home have a common interest in the child, the school will be able to influence the parents in various ways.

PRACTICAL METHODS

Among the means to be used are: (1) literature containing information for the parents, such as the cards for mothers issued by Quensel,* 1904; (2) inviting of parents to visit the school on occasions when there are to be short addresses on the subject; (3) a parents' evening attended by the teachers and principals; (4) medical inspection of the pupils in the presence of parents when words of advice can be given by the physician on the subject of alcohol as well as on other matters of hygiene.

TEACHING WIVES AND MOTHERS OF THE FUTURE

Special importance is to be laid upon proper instruction for the girls because they are to be the future wives and mothers. They should early learn that alcohol acts as a poison upon the body and brain of the child, and that to give it alcoholic drinks is a serious trespass upon its future. With such instruction, the future mothers would find courage and strength to live abstinent and to have a

*The text of this article obtainable from the JOURNAL.

healthful influence upon the habits of their husbands, who, as drinkers, can make their lot one of misery.

One must avoid arousing antagonism between the school and the home on account of the alcohol question, and this can be done by the exercise of tact on the part of the teacher. In all that he says, he must remember to shield the fathers of his pupils as much as possible, and therefore, he must use no words that would wound or defy the father in any way. Sympathy, rather, is to be evoked by treating the condition of the drunkard as one of disease.

If instruction in the public schools is held to be necessary, it follows that the teachers must receive thorough instruction, in connection with general hygiene, concerning the nature and effects of alcoholic drinks.

THE SOCIAL APPEAL

Lectures to the pupils in higher schools by abstaining physicians is a means that is being employed in many parts of Germany. In such cases, the principal is in position greatly to strengthen what the physician says. If the question has been treated from the pathological standpoint, the principal can dwell upon the ethical factors, the social duties of those who are to take a leading place, and the duty, first of all, of keeping free from injury by alcohol, the brain, the organ held in highest esteem, and upon whose precise work their further development essentially depends.

An appeal that will not be ineffectual is one made to the feeling of honor and the love of country in the young, showing that everyone is in duty bound to labor for the welfare of the home, and that the conduct of the educated is to be measured by a higher standard than those in the humbler walks of life.—*Translated for the SCHOOL PHYSIOLOGY JOURNAL.*

The article by Dr. Frohlich on page two, gives some indications of the extent of the custom of giving alcoholic liquors to children in at least one European country from which large numbers of families come to America each year. The custom is not very prevalent in this country except among the families of foreign birth. But the frequency with which it is met by the teachers in centers of such population is the reason for publishing above parts of an address on the subject of anti-alcohol instruction in the schools, given by a physician in Germany, in which he lays special stress on the importance of training the young to total abstinence. Space admits only a summary of some of his chief considerations. [Editor.]

In the District of Columbia it has lately been found that girls between the ages of 12 and 16 are physically sounder than boys of the same ages. A larger percentage of the boys have heart and lung troubles. Cigaret smoking by the boys is suggested as one cause of the difference.

HEALTH'S DECALOGUE

[FROM A FRENCH MEDICAL REVIEW]

1. Rise early, retire early, and fill your day with work.
2. Water and bread maintain life; pure air and sunshine are indispensable to health.
3. Frugality and sobriety form the best elixir of longevity.
4. Cleanliness prevents rust; the best cared-for machines last the longest.
5. Enough sleep repairs waste and strengthens; too much sleep softens and enfeebles.
6. To be sensibly dressed is to give freedom to one's movements and enough warmth to be protected from sudden changes of temperature.
7. A clean and cheerful house makes a happy home.
8. The mind is refreshed and invigorated by distractions and amusement; but abuse of them leads to dissipation and dissipation to vice.
9. Cheerfulness makes love of life, and love of life is half of health. On the contrary sadness and discouragement hasten old age.
10. Do you gain your living by your intellect? Then do not allow your arms and legs to grow stiff. Do you earn your bread by your pickaxe? Do not forget to cultivate your mind and to enlarge your thought.—*Leader.*

BEAUTIFYING THE SCHOOL GROUNDS

BY SUPT. GEORGE C. HORTON

WE had a meeting of all the pupils old enough to take part. One of their number was chosen chairman and another was chosen secretary. The proceedings were carried on according to parliamentary practice. The pupils themselves proposed most of the needed improvements and every motion carried.

Here are some of the things voted to be done: Stumps and unsightly ash piles are to be removed, the fence is to be painted, sidewalks are to be built, trees, shrubs, vines and flowers are to be planted, other things of minor importance are to be done.

The boys and girls are doing the work, the district furnishing the material. Each part of the work has its "boss," and the tools appeared seemingly of their own accord. The work was begun on the same afternoon of the meeting and pupils are showing much enthusiasm.—*Moderator Topics.*

GAINS IN HYGIENIC TEACHING

UP to 1882 (the year the first law was enacted requiring hygienic and temperance instruction), although there had been desultory attempts since the days of Horace Mann, little or no hygiene was taught even in high schools. The few attempts at teaching physiology and anatomy were looked upon with distrust by parents and teachers who considered this subject as embarrassing and dangerous to children.

The antagonistic attitude of parents and untrained teachers maintained a vicious circle of inefficiency from which the first series of graded text-books was a radical departure to find a path by which the truths of science can be adapted to children's minds.

WHAT CHILDREN ARE TAUGHT

In the study of 93 text-books, the following notes were made;

Nearly all contain the following topics in hygiene, listed in order of frequency:

Foods with discussion of classes, nutritive values, and cookery (occasionally). First aid to the injured, care of the sick, quality of clothing, common diseases, contagious diseases, poisons and antidotes, drinking water and drainage, cooking, several, gymnastic exercises, several, active games, antiseptics and disinfectants, public hygiene, food inspection, patent medicines, school inspection, tests for eyes and hearing.

THE EVOLUTION OF TEXT-BOOKS

The subjects have been simplified until we have 37 text-books for elementary grades reaching 13½ million children who go no further in the schools; a few books as excellent for their purpose as are any of the high school books for theirs. Twenty-two years ago [about the time of the enactment of the first law] there were practically none.

The average proportion of hygiene is one-third of the modern text-books, a little more in elementary grades, and less in high school. A few give more than half their pages to it.

The average in 25 books for "high schools" (or colleges) published before 1883 is less than one-twelfth.

Scientific progress is reflected not only in many details of accuracy of statements but also in added teachings concerning cells, cerebral localization and the nervous system; bacteria, communicable diseases, dust, antiseptics, inspection of schools, foods and milk; intoxicants and patent medicines.

There are fewer pathologic details (or they were selected with greater discretion) and more attention to the normal states. The

ideal of a healthy, active, physical life as a basis for success and happiness is kept in the foreground and made more interesting. That "success depends on health" is fortified in several books by numerous lately discovered facts in school work and business life.

It is probable that no other kind of text-book has evolved so rapidly to this degree of merit. It is certain that no other country has so good, and that the leading physicians and educators of England, almost unanimously, and those of Germany and lesser governments are urging the American teaching of hygiene and temperance on a physiologic basis.—From Report of Committee of the American Academy of Medicine, 1906.

SWEDEN TO THE FRONT

SWEDEN has set the pace for all the nations in inaugurating at public expense a special course of instruction for teachers in public school temperance teaching. As announced in our columns some months ago the *Riksdag* appropriated \$7000 for assisting "instructors in primary schools, professors in normal and high schools to inculcate in their pupils exact up-to-date ideas about alcohol." The minister of public instruction delegated the organizing of the course to the Central Temperance Education League.

The course was opened at Stockholm on June 15th at the Royal high school of artillery and engineering which offered a spacious building with modern chemical and physical laboratories.

The Minister of Public Instruction, according to *L'Abstinence*, welcomed the members of the teaching profession, who, he said, had not hesitated to sacrifice their well-earned vacation to become pupils in order that they might obtain the necessary acquaintance with the subject which would enable them to combat this terrible evil which ravages society of today. "The object," he said, "is grand; to train youth to temperance and through it the whole nation. The educational method is unquestionably the best."

The Central Temperance Education League has had a most successful year, having given in different parts of the country ten courses of temperance instruction with audiences of from 200 to 1000 hearers. Several of the courses were opened by city officials, and contributions have been made to the work by municipal councils as well as by temperance societies. The League is composed of representatives of eight abstinence societies whose membership is about 450,000.—*Translated for the School Physiology Journal.*

THE INFLUENCE OF PARENTAL ALCOHOLISM UPON THE RACE

BY SIR VICTOR HORSLEY AND MARY STURGE,
M. D.

WE have, indeed, been extraordinarily slow to grasp the thought that children represent the life and vitality of their parents and of the their parents' parents before them, although we have long known full well that among the lower animals this scientific truth prevails, and that there is ample evidence of its being applicable to mankind.

In order to develop to perfection anything great or complicated in nature, favorable conditions are required, and if we apply this rule to the human body or brain, we shall begin to understand the supreme importance of safe-guarding the unborn child from the very earliest moment, remembering that, after all, birth is but an incident in any human life history.

At its origin, every life, whether animal or vegetable, passes through a germinal phase of existence, during which period it is by no means passive, but is dependent on being surrounded by healthy and right conditions, if its subsequent development is to be a success. The original protoplasmic cells, which unite to form the beginnings of the future child, consist of very highly endowed and specialized protoplasm, possessed of the function of "development," thereby surpassing the powers of any other cell in the body. Now germ plasm may be initially healthy, or it may, from the very first, be feeble and devitalized; it may be surrounded before it starts on the journey of life with pure blood, or it may be in a state of poor nutrition, because the blood of the parent (father or mother) is depreciated by protoplasmic poisons, by such drugs as alcohol or lead, or by such diseases as diphtheria, syphilis, etc.

Although, as we have stated, some of the hereditary forces that influence a child come from some more remote sources than the actual parents, nevertheless, it is, of course, also true that these latter hold in their hands much power for good or evil as regards the vitality of their offspring. It is customary to consider that the greater share of responsibility belongs to the mother, although this is questioned by some authorities. In any case, the share of the father is undoubtedly large. For instance, a case which is typical of hundreds of others, is reported by Dr. Norman Kerr, in which the first born was a son and then a daughter, who both mentally were excellent specimens of vigorous humanity. After the birth of the

daughter, the father fell into the habits of dissipation and rapidly became an habitual drunkard. He had four more children, of whom one was defective in mind, while the remainder were complete idiots.

Dr. Sullivan reports a similar case in which the older children of a family were ordinary normal human beings, while the younger ones were neurotic, impulsive and distinctly degenerate. The mother had become an inebriate before these younger ones were born. We know these are not isolated cases.

Only an insignificant number of drinkers' children are physically and mentally normal: 17.5 per cent. according to Demme, and 11.7 per cent. according to Demoor, etc. Arrive found tuberculosis in 10 per cent. of drinkers' children, but only in 1.8 per cent. among the children of healthy parents.

The brunt of the evil heritage caused by alcoholism falls upon the nervous system of the next generation.

Owing, first, to the deterioration of the germ cells, and, secondly, to the impoverishment of the system of the mother during the important months of pre-natal life, children of such parentage frequently possess an enfeebled nervous organization at birth. It may be impossible to recognize this immediately, although even during infancy impaired nerve vitality shows itself in convulsions.

With regard to mental development, many children of alcoholic parentage show signs of stupidity, mental deficiency, moral instability, and lack of normal control, while others exhibit idiocy, epilepsy, and hysteria.

Public attention is at this moment being directed to the "problem of the feeble-minded," and those experts who have devoted most attention to the subject regard alcohol as certainly one of the causative factors in that deterioration of brain-tissue which lies at the real root of the mental inability and feeble-mindedness of so many human beings.

At a discussion on this subject at the Vienna Congress against Alcoholism, a doctor stated that the teachers in wine-growing districts of Lower Austria know that a supply of very bad scholars in any one year denotes a good vintage six years previously.

In addition to those whose feeble-mindedness is quite apparent, we have in our midst thousands of children more or less mentally deficient, many of whom are attending our day-schools, and are the despair of their teachers, by whom they are known as "dullards." These supply the ranks of the criminals and vicious who fill our reformatories, work-houses, and jails, and their numbers are reinforced by a large contingent of

other children who, although fairly bright at their lessons, are yet morally defective.

People recognize that it is the duty of the legislature to deal with such facts as these, but we would point out that it is no less the duty of science to indicate the cause or causes of this state of things, in order that measures which are really preventive and remedial may take the place of those which, for want of fuller knowledge, are at present in vogue. It is not sufficient to spend money freely in striving to isolate these "degenerates," nor even to attempt to educate their permanently impaired (and consequently more or less hopeless) brains; some scheme is needed whereby their creation shall be checked, and such flagrant deterioration of nerve-tissue be prevented from occurring. In as far as this deterioration is due to the taking of a drug or drugs, we contend that the State ought certainly to interfere and strive to improve the social habits of the community, when these habits threaten to undermine national efficiency and vitality.—*From Alcohol and the Human Body.* (See advertisement.)

THE SCANDINAVIAN ANTI-ALCOHOL CONGRESS

FROM August 5th to 9th, representatives from four Scandinavian countries, Norway, Sweden, Finland, and Denmark, gathered at Christiania in the interests of total abstinence. Working through the newspapers received first consideration because of the headway already gained by this method in Sweden, where half a million of organized abstainers have already 77 daily newspapers representing their views. Besides the editors of these papers, who are mostly Good Templars, 13 other editors refuse to insert advertisements recommending alcoholic liquors.

Norway, with a correspondingly smaller population, numbers over 250,000 organized abstainers, and 40 daily papers taking their standpoint.

In both countries the movement has now spread so far that it is impossible to find support, outside of the large cities, for a newspaper that does not stand for the abstinence principle.

In the large cities the movement has less influence, hence the consideration given by the Congress to founding daily papers to represent the abstinence movement in Christiania, Stockholm, and Copenhagen.

Denmark is considerably behind the northern countries, and yet there are 170,000 organized abstainers and there is one daily paper

published in Arline that is advocating the reform.

It is the expectation of these countries to reach what Finland has already accomplished, in many localities, the complete banishment of alcoholism.—*Die Alkoholfrage*, Sept. 1908.

PROGRAM

SOME PERTINENT FACTS ON THE ALCOHOL QUESTION

ROLL-CALL—Single brief news items or quotations concerning: Austria, Bohemia, Denmark, Finland, France, Germany, Great Britain, Norway, Sweden, Switzerland, Thuringia, United States. P. 2, 3, 5, 6, 8, 10, 13, 18, 19, 29.



CURRENT TOPICS—The Relation of Drink and Tuberculosis. Pp. 5, 19, 23; also JOURNAL, Dec. 1906 and April, 1908.

PAPER—Childhood's Appeal for Sobriety. Pp. 2, 12, 21.

PAPER—The Importance of Temperance Work Among the Young. Pp. 8, 9, 11, 14.

REPORT—Abstinence and Athletics. Pp. 28, 29, 30.

PAPER—The Peril of Alcohol as a Relief from Fatigue. P. 15.

PAPER—Wine and Beer in their Home Countries. Pp. 1, 2, 6, 18, 20.

READING—The Little Shepherdess. P. 16.

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"There's a fount about to stream,
There's a light about to beam,
There's a warmth about to glow,
There's a flower about to blow;
There's a midnight blackness changing
Into gray!
Men of thought! be up and stirring
Night and day;
Sow the seed, withdraw the curtain,
Clear the way!"

THIS issue of the JOURNAL appears as a double number (September-October) in order that we may hereafter mail each edition on the fifteenth of the month preceding its date. We have never published a number that presented a wider range of information on current topics of the alcohol question. Dr. Frölich's discussions of its relation to social progress and to labor problems are particularly timely. The articles on Wine and Beer will be welcomed by those who are having to combat misleading claims for these drinks. Teachers of young people will especially appreciate the blackboard diagrams, the lessons, and the admirable description by Mr. Peterson of an abstinence athletic triumph. The program for temperance meetings is a new feature which will commend itself to busy men and women who want suggestions and helps. Special attention is called to the announcements (pp. 30, 32a) of the novel loan exhibit of colored charts illustrating the relation of alcohol to daily life.

A PROMINENT temperance lecturer of Wales, writes enthusiastically of the steady improvement in the JOURNAL, of its wide range of material, and says he would not do without it. Neither can other educators, public speakers, writers or social workers, afford to be without the JOURNAL. Last year the index listed almost double the articles of former years. Volume XIII will include: practical lessons; striking diagrams for reproduction; bright, usable articles; "snappy" scientific articles on alcohol and tobacco;

workable methods of combating with great cigaret evil and translations of the cream of European anti-alcohol publications. We commend our club offers to new readers.

TWO IMPORTANT REASONS FOR THE INCREASE IN DRINK

SOBRIETY is gaining in America despite the lugubrious plaint of Mr. Wm. H. Allen, in the June *Atlantic Monthly* as to the "alarming" increase in the consumption of alcoholic preparations, and his intimation that this increase is evidence that temperance teaching has failed of full results.

Apparently he has been betrayed into too hasty or too casual assumption. Any well-informed student of the subject would remember that the years of public school temperance teaching have been contemporaneous with, *first*, the most aggressive, best-organized campaign of education in favor of alcoholic drinks that the world has ever seen, and *secondly*, with the greatest influx of immigrants that America has ever received.

No one would attribute all the statistical increase in the consumption of alcoholic liquors to our newer citizens of foreign birth or parentage. Not all of them drink, but a very large percentage of them do. Compare the number of adult immigrants who have come in a decade with the increase in the consumption of alcoholic liquors, and this increase could be explained by a not excessive per capita consumption of alcohol by these newcomers, especially when it is remembered that the estimate should include the increase due to the drinkers who came to America in the preceding decade as they were approaching adult life and who have continued the drinking habits of their fathers, thus further swelling the liquor statistics.

A writer who sees only the great amount of temperance work done, or of temperance education and who thinks them a failure because he sees that other isolated fact—an increased per capita consumption, and who leaves out of consideration the pro-alcohol propaganda and the influx of foreign drinkers, is reaching conclusions by a method unworthy a serious student of social conditions.

JUSTICE TO THE FACTS

EVERY lover of childhood, of a wholesome and sound race will welcome sincere efforts to increase intelligent interest in personal and public health, and to promote practical means of securing it.

But it may be doubted whether the best way to go about it is by misrepresentation or

under-valuation of what has already been done by hard pioneer work often in the face of indifference and prejudice. At the very least, such a method does injustice to the substantial progress made in providing instruction as shown by the report of the committee of the American Academy of Medicine given elsewhere, and to the earnest work of thousands of teachers which has borne fruit in the lives and homes of their pupils according to the recorded testimony of their parents.

Some of the younger social reformers are inclined to be impatient at times with what has been done, and to think that the efforts of thirty years have been useless. But the school days of some of these men and women, at least, came too late for them to have any personal acquaintance with conditions existing before the enactment of the hygienic instruction laws, or to appreciate the barrenness of popular interest of that period in hygienic practices. That there is room for vast improvement will not be questioned; that there has been vast gain in the past quarter century cannot be denied if the facts are fairly presented.

There have been many causes for the change, but we must recognize the truth expressed in the *Journal of the American Medical Association*, eight years ago, that, "the people of the present day exhibit more intelligent interest in the discussion of sanitary problems, both public and private, than any preceding generation, and this interest seems to be steadily increasing. A large share, in our opinion, in this country, at least, may with justice, be attributed to the systematic study of physiology and hygiene including the scientific temperance instruction, which, for some years has been a part of the regular course of study for pupils in our public schools."

THE SAME OLD FALLACY

THE article by Prof. Munsterberg of Harvard, in the August *McClure's* which has been so widely reviewed, contained two pleas for alcohol which are old and familiar, in spite of their new make-up in psychological nomenclature.

The idea of using alcohol to make one forget "the little miseries" of the day, the "frictions and pains" is the old idea of drinking to "drown sorrow" and making one "forget trouble." The outcome in both cases is the same, the multiplication of miseries and frictions, sorrows and troubles to drown with alcohol on the morrow. Experience has

taught this fact, and science is now explaining and confirming it, and that, too, with several parallel sets of truth.

One feels irritated at the end of a busy day because he is fatigued. The poisonous waste products of fatigue are having an irritating effect upon the nerves and tissue. Nature's process of restoration is to carry away the fatigue products through the activities of the cells, changing waste substances for food substances brought by the blood.

Scientific investigators are now certifying that alcohol slows the activities of the cells. This means that it slows the natural process of restoration. The poisonous fatigue-products are not removed from the blood so quickly after alcohol has been taken, while the irritating effects are covered up by the lowered sensibility.

Besides, the feeling of freedom from fatigue often leads to fresh expenditure of energy, to the impulse to exertion and gossip (Wlassak) instead of to rest that the unveiled sensations would impose.

Furthermore, when the process of restoration is solved, it may not be completed by the next morning, which explains why the drinker enters upon his next day's work handicapped, more susceptible to fresh worries than he would be if his normal physical processes remained undrugged.

A measurable decrease of working ability from ten to twelve hours afterward has been found to follow the taking of quantities of alcohol from two to three times as great as that afforded by two glasses of champagne.

The object for which the "little miseries" are to be banished by alcohol, according to Prof. Munsterberg, is to set free and reinforce "unchecked enthusiasm for the dominant ideas." But here again scientific investigation shows that the "dominant ideas" have a poorer chance after alcohol than before; for the amount contained in a single glass of champagne (10 to 12 ccm.) produced a measurable weakening of the critical faculty (Specht) lasting from half to three-quarters of an hour.

The "dominant idea" in an "artificially inhibited brain," as Prof. Munsterberg calls it, is at a disadvantage even if only social enjoyment is the object, for "the heightened imagery and freedom of utterance following the first one or two glasses are attended with lack of control and imperfect co-ordination. . . . What the speaker considers as a brilliant flow of imagery may be insipid and coarse, the diversion from normal being not in the exalted imagination, but in the defect in judgment." (Cutten).

The Little Shepherdess

By Emma S. Allen

GOOD-BYE, Little Shepherdess! Be sure and feed my lambs."

"Good-bye, Len! Be sure and take good care of yourself."

The words, seemingly spoken lightly, had more in them than the hackneyed phrase commonly holds of good will or caution. The eyes of the girl who uttered them, as she stood on tiptoe to receive the careless kiss of the tanned young sheep-herder, were brimful of a wistful anxiety, that he was not slow to associate with the parting injunction.

"Of course, Sis! Don't I always take good care of myself?"

Marion did not answer. She was thinking, with a sinking heart, of the last time her handsome big brother had gone to market his herd of six hundred fat sheep, the product of a year's toil and lonely isolation in the desolate range of close-cropped hills. There were an even thousand of the bleating mutton-heads this year, and Leonard had contracted for their sale direct to the Great Western Meat Market.

"You needn't think I'm such a fool as to go as far as I did last time," he called back to the girl in the doorway.

At that distance he felt it safe to allude to the disgraceful debauch which had terminated his last annual trip to the railroad, thirty miles distant. She could not see, from her niche in the little porch, the look of shame in his defiant brown eyes, or probe his sore spirit with the anxious expression in her own fond blue ones, a look that had never quite left them since the sad day when he had returned, the money from his entire herd sunk in the saloons and gambling places of a young city in the heart of a vast vintage section in California.

"I *can't* imagine—that—dear," she called back to him, laughing bravely to hide the sob in her voice. She threw him a kiss, and he tossed one back, as he rode away in the rosy sunrise dust, behind his herd.

Marion ran back into the little sitting-room, and dropped on her knees beside the couch, sobbing out the burden of her heart.

"If he falls this time," she confided to her most intimate "chum," the biggest cushion, that had pillowed her head in many an anxious hour, "if he falls again, I'll have to give him up and go back to the girls. They all *said* I couldn't keep him straight. Poor Len! he never was straight—he always toddled crooked when he began to walk; poor little—er told me, when she willed him

to me. But there! I don't care if he always goes crooked. Didn't I promise mother I'd stand by him—and help him overcome poor father's legacy—that dreadful taste for drink? The others aren't responsible, as I am, for they never promised. They were grown up and married, and had other things—houses and children—but I—oh, no, no! of course I'll never give him up, even if—my!" she exclaimed, as the clock struck seven. "I haven't fed a lamb—or a chicken—or touched a dish—or made a bed! And I must start in an hour."

"Oh, he surely can't fall this time!" she kept saying in her heart, as she clattered the dishes, out in the tiny kitchen. She scarcely knew that tears were dropping on the old-fashioned blue-and-white dishes that "the girls"—her three married sisters—had donated toward her "outfit," when she voluntarily declined a desirable position "near home," and went off to teach a little mountain school—"just to be near Leonard."

After two days of lonely companionship with his dust-grimed, woolly herd, and a night at one of the isolated foothill roadhouses, Leonard corralled his flock for the last time and fed them, then betook himself to a house in the great valley where cattlemen and teamsters of the roughest class congregated to drink and gamble. He ate a hearty supper, then leaned for a few moments against the casing of the barroom door, declining to join the smokers within. Temptation never assailed him when his pockets were empty, for he was the last man to accept "treats," and the first one to give them.

"Haven't sold my mutton yet; wait till I come back," he answered the bartender's pressing invitation. "Then I'll drink a glass of port with you fellows, but nothing stronger. I've sworn off on whiskey since that knockout last year."

"All right, Stowe," and the bartender winked at his more hardened patrons, "port won't hurt you—pure California wine made down yonder in the vineyards of the garden of Eden—of course not." "Of course not," the others echoed, as Leonard went away up the bare stairs, to one of the little bedrooms.

It was at the dark hour just before dawn that the loud voice of the landlord aroused him from sleep, shouting through the long narrow hall outside: "Say, boys, get up and look out. Koch & Zinzendorf's winery is burning up."

Leonard sat up and looked about at the

faint glow on the walls, then got up and went to his window. The winery in question he knew to be one of the largest in the valley, but its burning did not concern him. He had no notion of joining in the general exodus from the house to the fire, but he could not sleep; he dressed and went out to prepare his herd for an early start on their last day's march.

"Poor little woolly chaps!" he muttered, patting the butting heads that pressed about his knees, as he entered the corral to feed them for the last time. As he scattered the feed he whistled softly a strain of the song Marian often sang as she walked with him over the rocky pastures, "He shall feed His flock like a shepherd." Marian's sweet, unobtrusive way of singing such songs, of playing on her mandolin "The Shepherd Boy," and of hanging on the walls pictures of "The Good Shepherd," and "While Shepherds Watched their Flocks," had always pleased him. Now he felt a sudden thrill of tenderness at the memory of her unselfish interest in him and his work—of her lovely way of clothing his rough life with poetic beauty, instead of despising it, as her sisters did.

Then another song, sweeter than all the others—the one she sang oftenest—stirred in his heart and beat softly against his lips:

"The Lord is my Shepherd, I shall not want;
He maketh me down to lie
In pastures green; He leadeth me
The quiet waters by."

Once, when she had sung it as she stood with him beside the little thread of a creek, where the sheep were drinking, she had looked up at him with all the yearning tenderness of her soul for his in her heaven-blue eyes. And he had put the holy pleading away with a half-vexed laugh. It came back to him, now, in that quiet rose-dawn, as a refrain rang softly in his heart, "His yoke is easy, His burden is light."

He ate his breakfast silently, among the loud-talking men, and rode away facing the red sunrise, with a new resolve in his heart. "I'll come back to you as pure as I went away, Little Shepherdess," he murmured, as

the patter of four thousand little hoofs ahead of him beat the heavy morning dust into a cloud of red gold haze.

"Hi, there, young man! Look out for your sheep ahead there!" shouted a man who had run out from the crowd to meet him by the ruins of the winery. As he spoke, he jumped an irrigating ditch beside the road that was brimful of a dark fluid. "Two hundred and fifty thousand gallons of port wine burst loose in the fire, and are flooding the side of the road for half a mile. Your sheep are drinking the stuff and it'll kill 'em dead. A horse is dying of it now." "Can't a horse stand as much as a human animal?" he called back as he rode ahead.

A number of men idling about hastened to the rescue and helped drive the loitering sheep



"Yet while the world's ambitious, empty cares,
Disturbed her never, she was one made up
Of feminine affections, and her life
Was one full stream of love from fount to sea."

past the reach of temptation; but before Leonard had them in marching order again, at least a score of the poor brutes had toppled over in the dust.

"Turn the lot into my field yonder, and let's see what we can do for the poor creatures," a kindly voice suggested.

After half the morning spent in efforts to revive the poisoned animals, Leonard went on his way again, but he left fourteen sheep behind him.

"Hand in a bill of damages (hic) to Koch & Zinzendorf (hic); I would!" remarked a stuttering sympathizer, who had imbibed too freely from the sources of the same flowing stream.

"Would you, I wonder!" exclaimed the young herder, sitting erect in his saddle, his

blood tingling for the first time in his life with the proud consciousness of that royal inheritance, the priceless jewel of manhood. At the same time a wave of shame reddened his face. How low he, too, had been—no nobler than his dumb animals! "Is a sheep of more value than a man, do you think, that I should sue for the value of these dead beasts, because an accident diverted that stuff from the stomachs of men? No!" and he rose in his stirrups, his eyes flashing and his voice ringing clear and firm. "I've had the temperance lesson of my life, and you know I needed it. With God's help"—reverently lifting his slouch hat—"I'll never touch another drop of the cursed stuff that makes brutes of men, and kills poor dumb beasts the first drink."

Marian sat under the yellowing vines of the tiny porch at sunset, her fingers occupied with needlework, while her ears listened for the sound of distant hoof-beats. Within, the little white supper-table was daintily set for two. "Leonard will come home this evening," she had told the "big girl," confidently, at the schoolhouse steps.

As twilight crept over the hills, her fingers shook so she could not get the stitches even, so she went in and put her work away. A swift prayer for courage and faith welled up in her heart as she recrossed the room, and looked up at the face of "The Good Shepherd," singing with a brave little voice:

"He leadeth me, by day and by night,
Where living waters flow."

"Hello, 'Little Shepherdess!'" rang a voice across the rocky pastures, as she again stood in the door facing the fading afterglow. "Here I am, as good as my word—on my 'honor bright,' this time—and 'ever for evermore.'"

His horse found the way alone around the house to the stable, while Leonard held a little yellow book close to the tear-wet face of the girl in his arms. "My bank book, dear," he said, opening it to the first entry, "where all the money went this time! It was the sheep who went astray on this trip. They gave their lives for the shepherd—taught him the best temperance lesson he ever learned. I'll tell you all about it at supper."—*The Classmate.*

ALCOHOLISM IN WINE-DRINKING COUNTRIES

BY E. L. TRANSEAU

A FAVORITE argument of those who propose to promote temperance in this country by the use of wine and beer is that there is comparatively little *drunkenness* in wine and beer-drinking countries.

Drunkenness not the true measure of alcoholism. Intelligent students of the alcohol problem have got far beyond taking drunkenness as the measure of the amount of evil wrought by alcoholic liquors. Men may suffer seriously from alcoholism without ever having been drunk. Among the evils which may be caused by the continual imbibing of light drinks below the point of intoxication are suicide and insanity.

Suicide in wine-drinking France as shown by the following table "throws a sad light on alcoholism in that country. The causes were absolutely proved to be alcoholism or habitual drunkenness."¹

Year	Total number of suicides	Total number of suicides caused by alcoholism
1879	6,496	854
1881	6,741	884
1885	7,902	868
1890	8,410	904
1895	9,263	1,164
1899	8,952	1,158
1900	8,926	1,192
1901	8,818	1,192
1902	8,716	1,176
1903	8,885	1,120

Insanity in France also does no credit to the claim that countries which use wine abundantly are free from the evils of alcoholism. Recent figures² compiled under the direction of the French ministry of the interior are as follows:

Total inmates of insane asylums,	71,551
Alcohol, sole cause of insanity,	3,008
Alcoholism, complicated with mental weakness or alcoholic heredity,	3,295
Alcoholism, a partial cause,	3,639
Total cases in which alcoholism was a factor,	9,932 or 13.6 per cent.

These figures, striking as they are, present only an incomplete picture of the harm wrought by alcohol to the mind in France. They took no account of the causes of insanity due to drinking habits of ancestors. They gave no information as to the other great army of defectives shading off through weak-mindedness and mental unbalance to nervous instability.

The serious element in these statistics is that they reveal an increase during the years from 1897 to 1907 of fifty-seven per cent. in the number of insane in thirty-six departments of France.³

Alcoholism in Switzerland furnishes additional proof of the fact that alcoholism develops in alarming proportions in wine-drinking countries. Wine is there the principal

liquor produced. In 1885, the government took over the manufacture and sale of distilled liquors, and ever since has appropriated a part of the profits to preventing drunkenness and the curing of inebriates. By this monopoly the use of brandy was lessened and the use of wine increased from thirty-eight quarts per person in 1884 to sixty-nine quarts per person in 1898.

During the thirteen years from 1889 to 1902, it cost the government about 8,000,000 francs (\$1,600,000) to build asylums for inebriates, and jails and prisons for drunkards and criminals who committed crimes while in a drunken state. Switzerland has now thirteen inebriate asylums, or one for every 10,000 of the population.⁴

Wine and inglorious content. A recent appeal for the wide-spread use of wine concludes by pointing to "the millions of French and Italian peasants, with their simple meal of bread, or macaroni and cheese, and a flagon of wine, who are as happy and contented as the majority of the better fed and better dressed workmen of our own land," and then asks: "Why not combine the prosperity of the one with the contentment of the other?"

Why not? Because American prosperity will not combine with the habits of the old-world peasantry. America's prosperity was built up by vibrant energy drawn from abundant food, directed by clear brains under the inspiration of personal freedom. The true native American has no use for oyster-like contentment, fostered by the narcotic influence of alcohol. He glories in the divine discontent that spurs him ever toward higher and higher aims. And unless the selfish, mercenary insinuations of the various liquor interests succeed in plunging him into the beer and wine-drinking customs of the old world, he will go on advancing until the ideals of the founders and preservers of American liberty are realized:

Every man a God-man
Every man a king.

REFERENCES

- (1) U. S. Consular Report, September, 1906.
- (2) *La Semaine Medicale*, July 10, 1907.
- (3) U. S. Consular Report, November, 1907.
- (4) *Journal of Inebriety*, October, 1904.

HYGIENIC CUPS

CHILDREN," said the teacher one night as the bell was about to ring for dismissal, "I wish when you go home tonight you would ask your mothers if you can have a little cup to bring to school for your own drinking cup. And bring a nice, clean paper box to keep it in under your desk.

"Sometimes, you know, a child has the

measles or the scarlet fever or some other disease, and he comes to school not knowing that he has it, before he is really sick, and gives it to other children. And he is more likely to do this if others drink from the same cup with him. And then, too, I am sorry to say, there is occasionally a child who doesn't keep his face or his mouth clean, and we don't like to drink after him. So it is much nicer for us each to have his own cup."

The next day nearly all the children brought their drinking cups in neat paper boxes. The teacher brought a large glass pitcher to pour the water from into the cups and a clean plate to stand it on by the side of the water pail.—*Teacher's Institute.*

THE Insurance Institution of Thuringia showed in its report for 1906, says Dr.

Legrain in *Les Annales Anti-alcooliques*, that the effects of drunkenness for the sick and their associates are more terrible than in the case of any other disease in this sense, that, in general, they arouse neither pity nor the desire to give aid. On the other hand, they corrupt family life and unsettle it at its very foundations.

Therefore, the Institution lays special weight upon the importance of disseminating information about the nature of alcohol and particularly as to abstinence during work. To this end, it is distributing leaflets and very simple illustrated pamphlets, wall-charts, and pictures teaching the nutritive value of foods as compared with alcohol.

Professional accident insurance associations in Europe are more and more taking alcohol into account in their directions as to means of avoiding accidents. Among them are the instructions put in force this year among printers. They say: "The use of alcoholic drinks during work is forbidden. Such use lessens the mental capacity of the worker and makes him unsuited, as long as it lasts, to be employed at machines and in industries which use them. Superintendents are required to exclude from work and from the factory all workmen who use alcohol."

The report from Leipzig for 1906 says:

"Statistics and experience with sick benefits show that alcoholics are more subject than others to diseases and their recurrence. The methodical struggle against tuberculosis has shown that the use of alcohol is an effective cause of that disease.

"It follows that the entire population should be interested in receiving information upon the alcohol question in as much as it touches vital interests."—*Translated for the SCHOOL PHYSIOLOGY JOURNAL.*

INFLUENCE OF BEER UPON THE USE OF SPIRITS IN GERMANY

BY DR. HUGO HOPPE

Nerve Specialist, Königsberg, Germany

IT was not very long ago that beer began to be warmly recommended by physicians and social students as one of the best and most suitable means with which to combat alcoholism. Even Dr. Baer, who was one of the greatest authorities on the alcohol question, in his book, "Drunkenness and its Prevention," published in 1890, said that the use of beer as a popular drink would become one of the strongest defenses against whiskey, and he wished, therefore, that the state would do all it could to promote the production of cheap beer.

Dr. Rosenthal, also, professor of Physiology in Erlangen, in his much-cited work, "Beer and Distilled Liquors and their Relation to Public Health" said that beer was one of the strongest levers in the advance of civilization, "because it supplemented the barbaric and culture-destroying whiskey by substituting its mild influence in place of that which was injurious and dangerous. Wherever wine is not produced cheap enough to become a popular drink there we have every reason to promote the consumption of beer."

BEER DOES NOT DRIVE OUT WHISKEY

Today these and other writers are seeing with dismay whereunto their recommendations are leading.

Has the consumption of distilled liquors diminished? By no means, as the statistics show. The only considerable diminution (since 1870 when it stood at 4.3 litres) was that at the beginning of the eighties, when the consumption had reached a great height; but since then the use of distilled liquors has stood fairly constant at about 4.4 litres of absolute alcohol. Only in the last five years (1899-1904) has a small diminution taken place.*

BEER CONSUMPTION INCREASES TREMENDOUSLY

Beer consumption, on the other hand, has increased tremendously. From about 90 litres per capita used before the formation of the German Empire, to the middle of the eighties, the consumption grew until, by 1890, it had reached 105 litres per capita; by 1895, 115.7; by 1900, 125.1. The increase,

*With this is to be taken into consideration the fact that since the tax of 1887, the increasing use made of denatured spirits, shown by statistics, has in all probability led to a reduction of the distilled liquors [that is, has cut out from distilled liquors amounts that were previously used in the arts].

therefore, since 1895 is about 30 per cent. In 1902, in consequence of industrial depression, it fell to 116 litres per capita, and in 1903 to 116.6. Since the years from 1860-65 when it amounted to only 37 litres, the consumption of beer, therefore, has increased three-fold.

The amount of absolute alcohol consumed in this amount of beer is very considerable. Eight-tenths of a litre of beer at 4.5 per cent. alcohol would contain 36 ccm. (1.2 ounces) corresponding to the amount one would get in 120 ccm. (4 ounces or 2 wineglassfuls) of 30 per cent. whiskey.

The beer consumed in Germany averages $5\frac{1}{4}$ litres of absolute alcohol, annually, for each person, being $1\frac{1}{4}$ litres more than the average of the amount of distilled liquors consumed.

Germany, therefore, poisons herself more with the alcohol contained in beer than with the alcohol contained in wine, and that in the proportion of 21:16, or, beer alcoholism in Germany at the present time is 31 per cent. greater than the alcoholism from whiskey.

The result of extolling beer as one of the most potent factors of civilization, and the mightiest enemy of whiskey and brandy has been: that the consumption of the distilled liquors has changed very little, while to these liquors has been added beer, the use of which has already far exceeded the undiminished use of the distilled liquor, and has led to a great and still increasing beer alcoholism.

It has been thought that the alcohol in beer, because of its weaker concentration (beer averaging about $4\frac{1}{2}$ per cent. alcohol and distilled liquors about 30 per cent. some kinds 40-60 per cent.) is much less injurious, in fact, is practically harmless, and one hears that opinion expressed even today.

Prof. Strumpel of Breslau, has clearly shown the error of this opinion, and the serious danger in beer. He said, in a lecture in Nurnberg in 1894:

"Nothing is more erroneous, from the physician's standpoint, than to think of diminishing the destructive effects of alcoholism by substituting beer for other alcoholic drinks, or that the victims of drink are found only in those countries where whiskey helps the people of a low grade of culture to forget their poverty and misery."

Indeed, no! Under the mask of an apparently light, pleasant-tasting and even nourishing refreshment, alcohol in the form of beer has made its destructive entrance into circles which were closed against it in other forms. For whereas the word "whiskey" is frowned upon in good society, and the idea of moral depravity, the impending approach of moral and physical ruin, is everywhere connected with the term "brandy-drinker," there exists among high and low, opinions concerning beer that are opposed to the judgment of every reasonable and unprejudiced physician. For not only experience in hundreds of cases, but the simplest consideration of actual conditions, show us that the undeniable advantage over other alcoholic drinks which beer has on account of its greater dilution is many times outweighed by the disadvantage resulting from the immense quantities used.—*Translated for the SCHOOL PHYSIOLOGY JOURNAL.*

(TO BE CONTINUED.)

A METHOD OF REVIEWS

BY JAMES J. DOCK

Review is not a pet hobby with me. It is a real living frantic actuality; something not to be led but to drive rather than lead; drive constantly, drive regularly, drive systematically, drive with a determination of winning the coveted goal. It is not for me, at this time to discuss the subject, therefore, I will present the plan only.

Your work for the first two or three weeks should be well planned. Care should be taken as to the amount of work done and the manner of doing it. After you have covered 20 or 30 pages of geography, history, physiology, etc., have each pupil of the class provide herself with a suitable book, say a composition book. Then have her head each subject studied and list one question under each subject each school day. At the recitation the pupil reads the question selected, the answer to be given by some pupil of the class selected by the teacher. This may be changed and the class as a whole be given the opportunity to answer as each question is read. No question to be asked by any pupil who is not prepared to answer her own questions.

On Friday, instead of having the regular lesson assigned from the book, the teacher appoints one or two pupils of the class to gather the list of questions from each pupil in that class and write them on the black-board using them as the recitation, by having the writer read the list and having them answered in the same manner as the daily

questions are. This makes a counter review.

For example, Mary Jones has geography, history, physiology, etc.; each of these subjects should have five questions. No question is to be asked by any pupil that can not be answered by her. All questions are to be of the pupil's own grammatical construction. Each question is to be asked by the pupil writing it, and answered by the class as a whole or some individual pupil, just as the teacher sees fit.

Miss Jones has five questions each from geography, history and physiology. Should there be five or more pupils in the class we see that as a daily review we get five or more research questions; as a weekly review on each subject we get 25 or more questions covering the entire work that had been previously covered in the recitation, as a Friday review.

Reviews can not be overestimated. They should be carefully planned, carefully tested, and carefully presented.

[Mr. Dock's plan trains his pupils how to frame questions, tests them as to the relative importance of subjects, provides a diversified list of test questions, furnishes a language lesson,, incites interest, thoroughly reviews the subjects of study and greatly helps in the mastery of the same.—EDITOR. *Moderator Topics.*

THE NEW BIOLOGICAL ETHICS

THE 1,500,000,000 people, more or less alive on the earth today are but a mere handful compared with the countless generations who are to proceed from their loins in the future. All posterity now slumbers in our bodies, as we did in those of our ancestors. They demand of us the supreme right and blessing not only of being born, but of being well born, and they will have only curses for us if they awaken into life handicapped by our errors.

Their interests should dominate all our lives and we should live for our children, for our duty of all duties is not only to keep the life torch burning, but to brighten it a little if possible as it is passed along to our children's children. Indeed, from the point of view of the new biological ethics, this is the chief end of man and woman, the highest test of their virtue. Every human institution, home, school, state, church and all the rest, exists primarily in order to bring children and youth on and up to their highest possible maturity of body and soul. The value, not only of all institutions, but of art, science, literature, culture, and civilization itself, is ultimately measured and graded by how much they contribute to this end.—G. Stanley Hall in *American*.



Grammar Lesson

FOURTH YEAR

CLEANLINESS

BEGIN the lesson by asking how many "went in swimming" last summer and let two or three describe their experiences, telling whether it was in salt or fresh water, how long they staid in at a time, and how they felt when they came out. If there were any untoward circumstances, such as cramps, or possibly a narrow escape from drowning connected with these experiences, discuss them, suggesting the desirability of both girls and boys knowing how to swim, and also the simple remedies to be used in case of the common accidents.

What proved to be about the right length of time for one to stay in fresh water? In salt water? What happened when that time was overstayed? Why did some get blue and cold even before that? (Explain that some children are not so robust as others, or the blood may be impure in the case of cigaret smokers, and so each bather must use judgment for himself.) What treatment should each have when he comes out of the water? Why is it necessary to have a thorough rub-down?

What sort of indoor baths correspond to those taken out of doors? How often should these be taken? Cold baths, even though taken daily, are not sufficient. What other kinds of baths? How often should these hot soap-and-water baths be used? They should be followed by a quick dash or sponge of cool water to close the pores and prevent colds. Use the matter in text-books relating to bathing as a reading lesson, and compare with what has been said.

WHY BATHS ARE NECESSARY

Having discussed the best kinds of baths, with the methods for taking them, ask why baths are necessary. From the variety of answers given select the two fundamental (a) for cleanliness and (b) for health.

Ask each child to think of the most re-

finéd person he knows. What are the ways in which this is shown? Draw from the class that neatness is the first essential; that this neatness begins with scrupulous cleanliness of the body and includes care of the teeth, the hair and nails, of the clothing, inner and outer, and finally of the rooms occupied and the general surroundings. Cleanliness of person tends to make one clean in thought, word, and action.

If necessary, as will be the case in many schools, help the class formulate simple rules covering these points and have pupils copy them. These may be written on the board where they can remain for some time and encourage the pupils to live up to these rules they themselves have helped to make. When any of these points of cleanliness are violated, they may be corrected by referring to the rules. A series of simple drawings across the top of the blackboard may illustrate the processes of washing, combing and brushing preparatory to going to school and serve as a constant reminder.

Ask which they themselves like better, a very neat person or a slovenly one. Remind them that just as they prefer the neat persons, so others are apt to think children more attractive on account of their sweet cleanliness. The most attractive clothing is not necessarily that which is expensive, but rather that which is whole and very clean.

Show, secondly, that it is easy to form habits of neatness in childhood, and such habits will help later to business success. Read or tell the story of some boy who gets a position which a number of others wish, because the employer sees that the boy is neat in every respect and has orderly ways. Lead the class to see that the business man thus makes a wise selection, because slovenly assistants reflect on his business, and also because the careful boy will make a careful clerk, while the boy or girl who is slovenly in his personal habits will also be likely to be slovenly in business.

WHY BATHS ARE NECESSARY FOR HEALTH

NOTE—To illustrate the fact that a residue is left on the skin by the evaporation of sweat, drop a few drops of salt solution on a piece of dark cloth at the beginning of the lesson period, and show the whitish spots at the proper point in the lesson. If it is possible to get a drop or two of sweat and evaporate it on a piece of glass, that will be better.

Baths are not necessary merely for our own refinement, to make us attractive to others, or for business reasons; they have a very important part to play in keeping us good-looking and healthy. Let us see if we can find out from the structure and use of the skin why this is true.

How many have cut or pricked themselves without feeling pain or drawing blood? What was the reason this could be done? How many have hurt themselves in doing this? What organs carry sensation of pain? What carry blood? Has anyone ever pricked or cut himself entirely through the skin on any part of the body without causing pain or drawing blood? What does that show? What, then, is one use of the skin? How many parts has it? Which part is sensitive to pain?

Call attention to another function of the skin by inquiring what appears on it in very hot weather or after active play. Let each of two or three children hold the palm of the hand on a mirror for a moment, and let the class note that moisture has collected in each case. What do these things show? Lead the children to see that perspiration comes from all parts of the body and at all times. Tell them, if the book does not, that a pint a day is given off. Where does that sweat come from? Let the pupils see the pores of the skin in the palm of the hand by means of a pocket lens. Show drawing of a section of the skin with its sweat and oil glands. What is the nature of the moisture? The use of the oil glands? If pupils can not tell, have them find this out in their books. Show the cloth with the salt spots and explain that just as the salt made a tiny crust on the cloth, so the impure matter in the perspiration remains on the skin after the moisture has evaporated. What would be the effect on the pores if this dried matter is not removed by washing? Of leaving the dust and oil on the skin? What do the books have to say about the danger of clogged pores? About its effect on one's beauty?

WHAT SHOULD PERSONS DISPOSED TO LUNG DISEASE KNOW ABOUT ALCOHOL?

BY HEINRICH QUENSEL

They should know

1. That alcohol possesses no food value and therefore can have no strengthening influence.
2. That all alcoholic drinks on account of the alcohol poison they contain can exert a short temporary feeling of warmth and excit-

ability, but they soon induce sleepiness and lower the body temperature.

3. That the habitual use of alcohol diminishes the general resistance of the body against acute and chronic disease.

4. That alcohol irritates and weakens particularly the stomach and other digestive organs and thereby causes various chronic diseases of these organs.

5. That alcoholism must be looked upon as a leading predisposing cause of tuberculosis of the lungs.

6. That, therefore, a rational observance of general hygienic rules demands a permanent withdrawal of the alcohol poison from the human body.

7. That every nickel spent for spirituous drinks would far better be used for strengthening food, milk for example.



"Oh, for boyhood's time of June,
Crowding years in one brief moon,
When all things I heard or saw,
Me, their master, waited for."

8. That the habitual use of alcoholic drinks makes more difficult the cure of nearly all diseases, but particularly of tuberculosis.

9. That the use of alcohol increases the tendency to hemorrhage and is therefore entirely forbidden by many specialists, to patients with lung disease.

10. That the regular use of alcohol endangers the physical strength and health of descendants.—*Translated for School Physiology Journal.*

THE annual conference of the Eastern Public Education Ass'n, to be held in Washington, D. C., Sept. 28 to Oct. 3, occurs during the International Anti-Tuberculosis Congress, and both promise to be remarkable as to program and celebrity of speakers.

SOLVING THE PERENNIAL PROBLEM

BY EDITH M. WILLS

ONE of the perennial problems that most teachers have to meet when schools open is that of successfully prohibiting the use of tobacco on or near the school grounds, and, later, of recovering the victims of the vice from the clutches of this habit.

Doubtless some boys have been using the drug for some time, and these will be hardest to deal with because craving for it has become sufficiently imperative to make it hard for them to do without their accustomed indulgence during the school period. Others who have only recently formed the habit, perhaps during the idle vacation days, may more easily be controlled and helped to overcome the vice.

The problem is no easy one, for the boys are emulating their college-men heroes and many of them their own fathers, although those fathers are probably opposed to their sons' contracting the habit.

Of course it goes without saying that the teacher will mingle freely with the boys, interest himself in their sports, and gain their confidence and respect as soon as possible.

Whenever the question of narcotics is mentioned, let it be done frankly, judicially and dispassionately as one would talk over any other matter which affects the health, success, and morals of the boys. Grant that many are addicted to the habit, but point out that the scientific facts relating to the evil results of this drug have only lately been demonstrated. This is true of many other matters of science such as, for instance, the nature of and remedy for tuberculosis. Not to profit by all new discoveries, and follow new light is to retrograde.

As early in the year as practicable, present a carefully worked-out anti-narcotic lesson*, emphasizing the scientific reasons for abstinence from tobacco and reinforce the teaching by frequent well-timed allusions.

If it is found that boys are using tobacco, and especially if they do so about the premises, hold a general discussion leading the boys to see that inasmuch as it is harmful to themselves and to others, they ought not to smoke (or chew) on the school grounds, or indeed anywhere else, and should conquer the habit if they have formed it.

For instance, recall the main points of the lesson and the effects of the drug on growth and strength. Bring out its effects on their prospects in business by asking how it would

affect their chances of getting a desirable place in a bank or store, if the man who hired new employes should see them smoking there or elsewhere.

On the other hand, show how smoking encroaches on the rights of others, particularly girls and ladies, most of whom are sickened by the odor so that smoking makes one offensive to them, and appeal to their own sense of fairness as to whether they are justified in polluting the air which so many others must breathe.

Then put the matter in such a light that they will see that they are responsible for evil results to others who follow their example. Suppose for the moment that they themselves are very strong and the habit will neither harm their health, stunt their growth, nor grow to master them, what of the weaker boys? Are they not in duty bound to champion the welfare of boys who are weaker or who have less advantages? Read stories and items bearing on these lines and ask the pupils to bring others clipped from the papers.

If practicable, get the boys themselves to establish a rule that, at least, there shall be no tobacco-using on the school premises.

It may be helpful to start an anti-tobacco league. If the boys are unwilling to stop smoking about school on their own initiative, it may be advisable for the teacher to draw up rules forbidding tobacco-using anywhere on the school grounds, and also on the way to and from school, if the laws of the state give jurisdiction there, and have the directors sign and post it.

Ask parents to forbid their boys using tobacco in any form, putting the request on the ground of the damaging effects of the drug on health, growth, and scholarship, and when wise, speak personally with the boys who may have the habit.

HON. W. J. BRYAN is a total abstainer. It is said that when nominated for President at Denver, his health was drunk in unfermented grape juice. At a banquet in Japan, when he was asked by Gen. Togo to drink his health in champagne, he replied, "Admiral, all your victories have been won on water; when you win victories on champagne, I'll drink them in champagne."

PLEASE send JOURNAL beginning with September. We simply can't do without it.—*Kentucky Principal.*

*See Journals as follows: April, '06; May, '08; also anti-narcotic numbers, January, '07; February, '08.

High School Lesson—The Body at Work

THE BODY AT WORK

"Man's mind is more than his body, but the mind turns its thought into deeds by means of the voluntary muscles."

Life processes depend upon the proper activity of the involuntary muscles.

"Physical age does not depend so much upon the number of years one has spent upon this earth as upon the care which he has taken of his machinery."

ACTIVITIES OF THE BODY

THE human body has often been likened to a machine. In what ways is this simile an apt one? An inapt one? How does the amount and range of "work", that is muscular activity, compare with that of any known machine? The average age of an engine is said to be about 30 years. What is the average age of the human machine? Is there relation between the care a machine receives and its length of "life" and usefulness? Would it be correct to make a similar statement concerning the body? Upon what quite largely does length of usefulness and of life depend? Show that activity is not only the most reliable sign of life we know, but is in a sense life itself and has a vital relation to vigorous strength, prolonged youth, and unpalied age, for the assimilation of fuel and oxygen and the elimination of dead or clogging cellular tissue are forms of activity and depend upon exercise for vigorous action. Many believe that proper exercises, persistently followed, will, by keeping the body free from worn-out matter, put off the physical deterioration due to age till past the three-score years and ten. (See "Recovery of Youth" in March, 1908, *Physical Culture*.) Discuss the story of Weston, the pedestrian, and others of advanced years, most of whom will be found to lay considerable stress on habitual exercise.

Thus the activities of the body fall under two heads:

Thoughts turned into deeds—In 1902, Professor Bell of Clark University made a series of experiments to determine the extent of activity of normal children. He found that a typical child under observation (his own little daughter aged about 5 years) was active every moment she was awake, and her speech activity for the day amounted to 14,996 words. Another child made 11,930 movements during one play-day. Speech expresses the meaning of other activities. All taken together are a "record of the flowing streams of thought."

In bringing out the *extent* of voluntary activity ask the class to guess the number of words a normal child speaks in a day; the number of movements it makes. What is the

purpose of these motions? Ask the class to suggest kinds of business which show the *range* of activities. These will run from the manipulative skill of the fine jeweller who must use a magnifier to see the work he is doing, up to the use of muscles *en masse* by a Sandow. Mention also some sustained rapid-movement records that have been made as, for instance, those by compositors, pedestrians, etc. Compare the best of these with the greater ones of which creatures are capable. What kinds of work can be done without muscular activity? Show that no work however purely mental can be given to the world without at least the muscles of speech or some other form of muscular registration.

Energy into life—How is the energy obtained from food transmuted into life and power? Which of the vital processes of respiration, digestion, assimilation, circulation, excretion, or any separate part of these can be carried on without muscular activity? Note that the same force also aids in the generation of heat, and that shivering is a natural method of raising body temperature when a draft threatens unduly to lower it. Estimate the amount of energy thus transmuted in one day, even, and the tremendous sum total accomplished by voluntary and involuntary activity is almost past belief, especially when the amount of fuel—how many calories daily?—is taken into consideration.

MUSCLES—ORGANS OF ACTIVITY

NOTE—For profitable, preliminary home work, pupils may be asked to trace a simple outline of the body sufficiently large to admit of the larger and more important muscles being sketched in. The sketches should show the relative location, size, shape, and attachment of each, and be made only after the pupils have experimented upon themselves to find out the facts at first hand. Each pupil may thus be required to locate and study certain specified muscles and their antagonists, such as those which bend the forearm, the head, raise the body on the toes, which lift the ribs in respiration, etc. Certain questions may be put upon the blackboard such as, "What muscles are used in throwing a ball?" "What ones in chest breathing," etc., and one of more pupils may then learn the facts from experimentation, and sketch in the muscles so used on the outlines. The outlines may then be exhibited in class. Measurements of the muscles when flexed and relaxed should be appended and pupils encouraged to observe and note other points not mentioned. However, here as always, bear in mind that while it is proper and desirable for high school pupils to get a clear idea of simple anatomy, structure is always to be subservient to physiological action and both to hygiene—"means to render life happier and more efficient."

Location, structure, kinds, and use—At the class period call for the various facts discovered during the experiments and have each of several pupils rapidly locate on the large outline* a certain pair or set of muscles and let others describe their action and use.

*See description page thirty.

There will probably be no objection to the examination and dissection of a leg of lamb (the leg of a fowl will do) before the class, and it will add very materially to the interest and real knowledge of the facts. See that the class note how the muscles overlay and cover the bones, the glistening muscle sheaths, and the tendons. What are the *origin* and *insertion* of a muscle? Carefully separate the tendons and muscles without cutting them and pull each to determine what part of the leg it controls. Which are the *flexors*? the *extensors*? What are the muscles having two tendons at the origin called? Those with three? Where are the tendons most numerous? Why? How do the tendons differ from muscles? What advantage in having many muscles in separate sheaths rather than one muscle broad or thick? What kind of muscle does this illustrate? What other kinds and why are they so called?

Show a sheep's heart and compare with voluntary muscle already examined. In what respects do they appear to differ? Note the points in which this differs from other involuntary muscle.

Ask pupils to show pieces of voluntary muscle and of a heart which they have previously prepared by boiling and demonstrate the minute structure of muscle fiber. If possible show *striate* and *non-striate* and *heart* fibers under microscope (200 diameters). How does the last differ from ordinary involuntary muscle fiber?

Let pupils determine the proportion of water and of solids in muscle by cutting up a piece of fresh muscle and weighing it before and after drying it. Note the loss of weight. Assign other interesting experiments.

How Muscles Produce work—To develop this point ask several in the class to lift a dumb-bell or similar weight while grasping the middle of the biceps firmly with the other hand. What change when the muscle contracts? Does a similar change occur when other muscles act? By what other agent was this work accomplished? How does Physics explain the mechanical process of this action? What other applications of the *lever* are found in the body? Study the action of the *joints*. The combined action of the muscles and joints in regard to mechanism and force may be studied by means of experiments made with a "joint apparatus," descriptions of which may be found in the "Outlines of Requirements for Harvard." Illustrate the necessity of co-ordination of the muscles by letting one member of the class undertake to thread a fine needle held by another pupil. Upon what does co-ordination depend?

If electrical apparatus is available demonstrate contractility of muscle and muscle fatigue by experiments on the hind leg of a dead frog. ("Eddy's Experimental Physiology and Anatomy," p. 86, gives excellent directions for these simple experiments.) Note that this experiment proves that muscular action is occasioned by some sort of stimulus.

This contractility is a form of energy or power due to combustion. What two elements were here oxidized, and what furnished the stimulus bringing about that chemical change? By what means is the living muscle fiber stimulated to activity? Note that although the muscle was severed from the body so that no fresh supply of oxygen could be furnished, oxidation took place. What does this prove? If this experiment were performed in a vacuum what gas would be found as one resultant? In what way does the body dispose of the carbon dioxide generated during muscular activity? What of the other wastes also produced? What connection between these wastes and fatigue? What explanation of the fact that fatigue is greater from many light muscular movements than from fewer but much heavier ones?

RELATION OF MUSCULAR ACTIVITY TO HEALTH

Almost everyone will readily admit the value of "exercise," but aside from its effects on the general muscular system or in producing unusual strength, few have more than the vaguest idea of how imperatively health requires it. As has already been pointed out, life itself depends upon the proper activity of muscular tissue as, for instance, in the action of the heart and walls of the arteries, and in peristalsis. Hence this lesson should amply discuss not only the general results of exercise but also the equally important, if more indirect, effects upon the vital processes.

Show that:

1. The physical and chemical changes in the working organs are greater than those accompanying any other bodily activity, and as a result of these changes in the muscles *new physical and chemical conditions* are introduced into the blood and lymph.

2. The nervous mechanism of *heat regulation* is trained to adjust itself to the changing conditions of daily life.

3. It *relieves* (temporarily), the *congestion* of blood in the internal organs often associated with sedentary habits, and by preventing inflammation, tends to prevent catarrhal conditions in the intestines and in the respiratory organs.

4. Muscular activity is the only thing which can be depended upon to increase the

Muscular efficiency depends upon the strength, endurance, and fine co-ordination and complete innervation of the muscles. How

do alcoholic drinks and tobacco lower such efficiency?

NOTE—Give one of the following topics to each of the boys and ask that they look up the illustration mentioned (see p. 30, etc.) and others as well and give them in class, explaining just how the alcohol causes the effects mentioned.

1. *Alcohol decreases strength.* Why?

Sandow is the proper type of the strong man, for his power is not due to bulk or to natural strength (he was once a weakling), but to the perfect and symmetrical development of the muscular system. He uses no alcohol. Note the case of pugilists like Sullivan and Corbett who were examples of great brute strength, but were conquered by alcohol. No one denies that great strength may be found to exist in spite of the use of alcohol, but the statement that each of these would be much stronger if he were an abstainer is amply proved by the fact that as soon as men go in training, alcohol is generally abandoned.

2. *Alcohol lowers muscular endurance.* Why? Note the American Marathon run (April 10, 1906), in which 25 completed the run in good time and Longboat hardly won having done the 25 miles over ordinary roads in an average of less than six minutes to the mile. Note that all the contestants (about 103) competed under strict rules which forbade any use of alcohol, or of stimulants such as digitalis and strychnia.

What of the Olympian Games at Athens in which abstaining Americans won twice as many points as the English, their nearest competitors. How did German scientists explain this? And what of the extensive experiments made by many army officials showing that abstainers could out-march and out-manoeuvre drinkers and then come in fresher? (See p. 68 of "JOURNAL" 1907-08). What were the results of the recent Games in England?

3. *Alcohol by its narcotic action on the nervous system seriously impairs the tone and fine co-ordination of muscles.* Why? What organ controls the co-ordination of muscles and how is it affected by alcoholic drinks? Why does the drinker have tremulous limbs? Sometimes see double? Mention some kinds of work which depend largely upon muscular tone and co-ordination. What have careful experiments in Sweden and elsewhere shown as to the effects of the ingestion of small quantities of alcohol upon marksmanship? Upon typesetting? Upon expert drafting? Upon violin playing? tight-rope walking, etc.?

4. *Tobacco impairs muscular power and precision.* In what ways? Ask for incidents on these lines which may have been observed by the class. Bring out the points that the use of tobacco diminishes the usefulness of the muscles: (a) by hindering the development of

muscles if practiced in youth; (b) by its poisonous action whenever practiced; (c) by its paralyzing effects upon the nerve centers, diminishing the nervous energy which a man can use in moving his muscles. (Hewes) In what way is the cigaret especially harmful?

HOW THE GALLANT HEFFERON LOST THE MARATHON RACE

IT is now perhaps more than ever before being realized that alcoholic drinks of any kind are not only useless, but positively dangerous, for athletes. The latest proof of this is given by the gallant South African runner, Hefferon, who gained second place in the great Marathon race in London last Friday afternoon. Interviewed by a Reuter's representative, Hefferon said:—"The weather was just right for me, but I saw it had a great effect upon others. My misfortunes happened near home, two miles from which, to my great regret, I accepted a draught of champagne. It was a great mistake. I got cramp a mile from the finish, and then lost my head." For accurate shooting, also, it is clearly demonstrated that alcohol is useless, and once again the King's Prize has been carried off by a teetotaler. Everybody knows that no steady drinker would stand any chance whatever in a contest for the King's Prize; but even the very moderate drinker must greatly impair his chances when he takes alcohol to steady his nerves for so critical a shooting contest. Holbein, the swimmer; Sandow, the strong man; Lewis and Clegg, of football fame; Fry and Tyldesley, the cricketers; Hackenschmidt, the wrestler; and many other well-known athletes, have often denounced alcohol as useless and unnecessary.—*English Alliance News*.

"Have a cigar, Bill," said one of Mr. Taft's classmates to him down at New Haven.

"No, thank you. I have never smoked," was the secretary's response.

An interesting revelation and one which may in a large measure account for Mr. Taft's fine health and remarkable endurance. The little vices, so-called, may not be particularly injurious singly, but they tell in the aggregate and in the long run.—*Herald*.

"You Americans are not good losers," remarked the Britisher at the Olympian games. "Perhaps that's true," replied the Yankee, "but there's everything in experience. In losing we haven't had as much practice as you fellows."—*Ledger*.

A GREAT ATHLETIC VICTORY

BY J. PETERSEN, KIEL, GERMANY

President of the German Teachers' Abstinence Society

ON the 28th of June, a sixty-two mile walking match at Kiel, to decide the championship in long distance walking among German athletes, again afforded striking proof of the superiority of abstainers over moderate users of alcoholic drinks.

The invitation to enter the contest was extended to all German athletes, irrespective of their habits in regard to alcohol, but all were asked to give the committee full information beforehand on the point. The sporting circles were keenly interested in the result.

On the morning of the race, eighty-three contestants assembled at Kiel at about five o'clock. The route led from Kiel through Pröetz; Plön, and Neumunster back to Kiel. The course was exactly 100 km. (62.1 miles) long and under the closest inspection, while "Samaritan" posts and places for aid were distributed along the way. Guides stood at all street corners to point out the direction. Members of the committee led the way in automobiles. Besides the telephone and telegraph, bicycles and carrier pigeons were used to convey news.

Each of the contestants was allowed a companion on a bicycle to carry his pack and to give him refreshments. Bands and singers cheered them on their march. All running was forbidden. No special costume was required. There was very little resting by the way, because a short rest does more harm than good. Little was eaten on the route, mostly bread and fruit, but a good deal was drunk because in such a long-continued strain of endurance there is a great loss of water, especially on such a hot day. The drinks taken were water, either pure or mixed with lemon juice, and milk. No one used alcoholic drinks while upon the march.

THE FOUR LEADERS ABSTAINERS

Seiffert, of Berlin, took the lead and covered the first ten kilometers (6.2) miles in fifty-three minutes. The following fourteen also took less than an hour. For the next ten kilometers, Seiffert took only forty-eight minutes, forty-four seconds. For this stretch as well as for the twenty and twenty-five kilometers, he made a new record, one hour, forty-two minutes and two hours, twenty-four minutes, respectively.

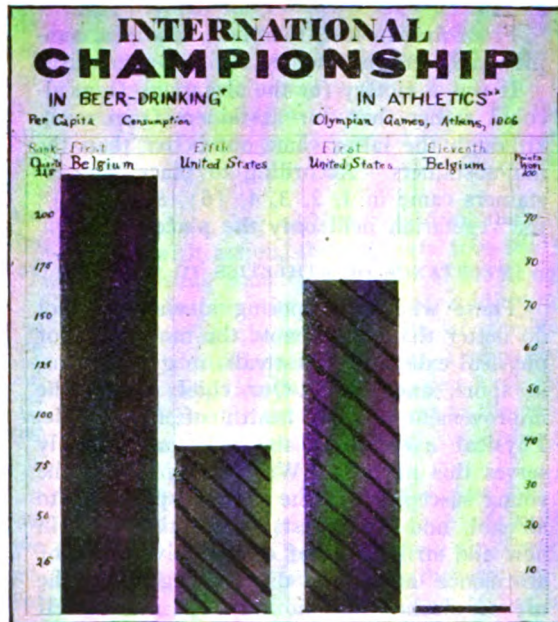
At this distance, a few began to give out, partly because they had tried to go too fast, and partly because they were foot-sore as a

result of unsuitable, too light, foot-wear.

After sixty kilometers, only a few gave out. Seiffert accomplished fifty kilometers in five hours, fifteen minutes, and twenty-five kilometers in eight hours, fourteen minutes. The others followed at relatively short distances.

In eleven hours, sixteen minutes, and twenty-eight seconds, Seiffert was at the goal. Here a cheering crowd of 20,000 people awaited him.

Seiffert, the first victor was an abstainer. After seven minutes came the second, *also an abstainer.* Then came two, side by side, Reiche and Finke from Berlin, *both abstainers.* The first four winners were strong an-



(Chart prepared and copyrighted by the Scientific Temperance Federation, Boston. Chalk reproductions permissible.)

*Statistics from *Die Enthaltenskeit Rett.* May, 1908.

**American Review of Reviews, July, 1906.

ti-alcoholists.

Altogether, among the ten prize winners, six were abstainers, and two of the others had lived entirely abstinent for months before the contest.

The contestants had all been questioned carefully beforehand so that their manner of life was exactly known. Of the eighty-three who entered the contest, twenty-four (29 per cent.) were total abstainers, fifty-nine (70.2 per cent.) were not, but asserted that they were strictly moderate.

Of the twenty-four abstainers, only two (8.33 per cent.) failed to reach the goal. Of the fifty-nine non-abstainers, thirty (51 per cent.) failed to reach it.

This must convince everyone that the moderate use of alcohol weakens the organs and makes them less fit for great exertion.

ABSTAINERS' ENDURANCE BETTER

The victory for abstinence consisted less in an abstainer's winning first place than it did in the fact that more than half of the non-abstainers fell out by the way. Although of the eighty-three contestants only twenty-four were abstainers, these constituted the greatest number of the first half to reach the finish. Among the first twenty-five to arrive, fifteen were abstainers (and they in the advance) and only ten non-abstainers. Among the last twenty-six on the other hand, there were only seven abstainers and nineteen non-abstainers.

From first to last, therefore, it was a complete and striking victory for anti-alcoholists.

It was a victory for the abstainers from alcohol rather than for abstainers from meat, although the latter came out better than the non-abstainers. According to place, the abstainers came in 1, 2, 3, 4, (6), 8, 9, (10); the vegetarian held only the places 3, 8, 9.

IMPORTANCE OF ATHLETICS TO SOBRIETY

Those who are opposing alcohol can not do better than to promote the movement for physical exercises at festivals, in gymnasiums, in sport, and play. Our chief aim is the improvement of the health of the people. Physical exercise in the open air directly serves this purpose. We, thereby render the young susceptible to the idea of opposition to alcohol, and in contests we continually win new and striking proof on the advantages of abstinence and the disadvantages of the use of alcohol. In no way can we so well influence our fellow-men as by showing the higher effectiveness of those who avoid alcohol. Let us, therefore, turn more of our attention in this direction than we have done hitherto.—*Translated for the SCHOOL PHYSIOLOGY JOURNAL.*

ALCOHOL AND MUSCULAR ACTIVITY

N. A. Knox, the fastest bowler in the world, said: "He who would bowl must avoid whiskey."

I positively know from experience in fifteen Marathon Races both in this country and England that alcohol used in any form in a race of this kind is a great detriment.—G. V. BROWN, Manager Boston Athletic Association (August, 1908).

Alcohol deadens the subjective sense of

fatigue and is therefore a dangerous beverage. Alcohol also deprives the tissue of oxygen, which is necessary for their normal functioning, and it produces disharmony of action between the cortical centers of various kinds. DR. ANDRIZEN, in *British Medical Journal* (1903).

The Swedish Captain Bengt Boy says that the results of the use of moderate quantities of alcohol upon marksmanship was first seen in the diminished ability to judge distances. The number of balls that hit the mark after alcohol was taken was 60 per cent. less than the average without. More than that, the soldiers taking it, showed a nervous excitement that finally manifested itself in firing at random, without taking aim.—*La Bien Social.*

EASY METHOD OF MAKING CHARTS

A large body outline which will be useful during the whole year's work may easily be prepared as follows:

Secure a piece of cretaline (a dark green linoleum specially prepared for use with blackboard chalk) green holland, or dark cambric. Sketch, or trace from a manikin, upon a large sheet of paper the outlines desired, rub the back with chalk, place over the cretaline and retrace. The result will be a delicate chalk impression, which if painted in with a fine paint brush in white oil paint and allowed to dry, will be permanent. Outline maps, charts for use in temperance work, etc., may be prepared in a similar manner.

A NEW METHOD OF TEMPERANCE TEACHING

At a summer assembly the charts exhibited at the World's Temperance Congress were a unique feature of the temperance work of the Rock River Assembly. They presented in a striking manner, evidence of the injuries to the individual and the effect upon the family and national life resulting from the use of alcoholic liquors.

The novel exhibit, supplemented by Miss Brehm's lectures, attracted many students of the alcohol question who received through both eye and ear impressions they might not otherwise have gained concerning the injury done by the alcohol habit.—Report of Rock River (Ill.) Assembly.

At a teachers' convention "the exhibit of charts was hung in the library of the normal school at Truro (N. S.) at which the provincial teachers' institute was held. Its educational value can not easily be estimated."



Primary Lessons

FIRST YEAR

PLAY, EXERCISE AND REST

THE educative play of the kindergarten is finding a place in the primary school and is specially useful in the beginning lessons in hygiene. What more natural than to begin by speaking of the play of animals, and of children and then leading up to the subjects of position, exercise, and rest?

Accordingly, we present the pretty little motion song, "Let's Play," which may be repeated, or be sung to the familiar tune of "When Puss with Soft and Velvet Paw."

For the first lesson, it will probably be best to use only the 1st, 2d, and 5th stanzas, developing the idea of play. For the second, use the 3d and 6th stanzas, developing correct position in sitting, standing, and filing. The 7th will serve as a text for the need and hygiene of rest. The 4th stanza may be added at some later time when the teacher wishes to speak of work.

I. PLAY

How many children saw birds flying as they came to school? How many have watched them during the summer. Ask several children to describe the prettiest bird they saw or the one they like best. Which sang the sweetest? In what different ways did they play? The birds love to move about and play and sing as well as we do. They help us and we like their songs, so we must always treat them kindly.

How many have a pony? What kinds of ponies do you like best? Tell how the ponies play in the pasture. How they run races. Who ever saw ponies run a race?

What other animals love to play? Question about the play of the animals mentioned and thus lead up to the play of children.

How many like to skip the rope? To play "tag" (or other games, with which your children are familiar)? What would you think of a puppy, a kitten or a child that did not like to play. Show that God has made all the young creatures and children to love play because play helps them to grow strong and well. A child or an animal that does

not play is probably ill and ought to be taken care of. Warn against overdoing, especially with the skipping-rope. We must be kind and unselfish and fair when we play.

II. POSITION

How many have ever seen soldiers march? What did they carry? How did they look? How did they walk? Lead the children to see that while the banners and uniforms were very nice, it was the fine way the soldiers themselves stood and marched that made it so pleasant to watch them. Speak of the way they stood on both feet, with heels together, arms at sides, straight back, and chin and chest up. What child can show us how a soldier stands? Let several try, and correct tactfully till all have the idea. How many would like to play they are soldiers and march? Before we march we must learn to rise quietly and nicely as soldiers might. Instruct the children how to turn in their seats and rise at the word of command. Soldiers try to do just as the officer tells them.

Repeat or sing with the children the third stanza with action, showing left foot leading and marking time. Now we will file in companies, keeping the position of soldiers and marching lightly on the balls of the feet. Name the children of aisle one, Company A, of aisle two, Company B, etc., and have them file as desired, either to music or to the count. When ready to seat the class, give directions for turning and sitting.

Children sing or repeat the first line of stanza 6, and on the second line sit, suiting the action to the word. If we sit "erect" and well back in our seats, with both feet on the floor, we shall look well, our bodies will grow straight, and we shall not get so tired.

III. REST

What do the little birds do all day? The kittens? The puppies? How do they feel at night? What do they then do? When do all the young creatures go to rest? They need to rest a long time at night because their bodies wear out a little bit when they use them all day. There is another reason, they are growing fast and must get plenty of sleep.

What do you do in the day time? Yes, you work a little, as well as play. How do you feel at night or after you play hard. When we feel tired it means that our bodies are wearing out a little and need rest. You are growing, too, and plenty of sleep helps children to grow faster. We need to go to bed early as the birds and kittens do.

How many ever saw a bird asleep? (If none have seen a canary or a barn fowl

asleep explain that it simply tucks its head under its wing.) What do you think it had done to get ready for sleep? We need to take more pains than the birds. What ought we to do? Get as many replies as possible and from them make it clear to the children that before going to bed they should have a full bath, or, at least, bathe the hands and face, and hang the clothing worn through the day where the air can freshen it. It is better to sleep in the dark as the birds do. Where do the birds sleep? It would be a good plan if everyone could sleep in the open air as well as the birds. We can not all do that but we can all have fresh air in our rooms at night.

Sing the 7th stanza with action.

Let the children tell the story about Jessie and question them till they understand why we must have good air, and why the clothing and bedding should be thoroughly aired.

We need plenty of rest.

Sleep helps our growth.

We must air our clothes and our beds.

We must open our windows at night.

WHAT MADE JESSIE'S HEAD ACHE

ONE morning when little Jessie came down stairs she seemed dull and did not care much for her breakfast. Her head ached and she did not play as brightly as usual. Mama could not guess what was the trouble till she went up to Jessie's bedroom. Then she knew for the window was down tight, the bed clothes were not spread down and the air was not sweet and fresh. So she called Jessie in from out-of-doors and asked her to sniff the air in her bedroom.

"It doesn't smell a bit nice," said Jessie. "What makes it so stuffy, Mamma?"

"I think," said Mamma, "that a certain little girl forgot to open her window last night, and so she breathed the same air over and over all night till it was very impure. She could not rest well. In the morning she did not feel fresh and bright as usual, and things seemed to go wrong with her. Perhaps that was why she forgot to spread down her bed as she ought."

Jessie looked around and then hung her head.

"I will try to remember about the fresh air and the bed next time, Mamma, truly I will," she said.

"Dorothy," asked her aunt one day, "do you like to go to school?"

"Yes, ma'am," replied dutiful Dorothy. "I like going and I like coming back. It is staying there between times that sticks me."

LET'S PLAY

1

(1) Let's play we're little birdies, flying here and there,
Perched upon a leafy tree, sailing in the air.
Hark! ev'ry birdie sings.
Sweet, sweet the music rings.

2

(2) Let's play we're little ponies, ready for a race,
Trot! trot! each pony tries to win the foremost place.
Trot, trotting? O, what fun!
Trot, trot! the race is won.

3

(3) Let's play we're little soldiers, see our fifes and drums,
(4) March, march, with (5) banners waving,
so our army comes;
March on, keep step just so,
(6) Toot, toot the trumpets go.

4

Let's be little carpenters, (7) up our houses go,
(8) Saw the boards, (9) then plane them well, (10) nail and hammer so.
(10) Knock! knock! a sturdy blow,
(11) Tap, tap! the hammers go.

5

(12) Let's play we're little children, jumping high and low,
Now, in air, now on the ground, see our jump-ropes go;
Swing, swinging in the air,
Swing, swinging free from care.

6

Now our play-time's over and here we are in school.
(13) Sit erect and study well, mind the teacher's rule.
Then when our work is done
Happy we'll homeward run.

7

Play the night is coming (14) see our eyelids fall.
Little birds have gone to sleep in the tree-tops tall.
(15) Down go our sleepy heads,
Resting on our little beds.—*Selected.*

Motions.—(1) Children stand, and move hands and arms to imitate flying. (2) Arms akimbo. Move the feet to imitate the trotting of horses. (3) Beat the drum. (4) Move the feet as if marching. (5) Move hands as if waving flags. (6) Left hand at the mouth to imitate a trumpet. (7) Move hands as if building a wall. (8) Imitate sawing. (9) Imitate planing. (10) Drive in the nails with the clenched fist. (11) Drive nails with the tips of the fingers. (12) Swing the hands and move the feet to imitate jumping rope. (13) All sit well and fold their arms. (14) Eyelids close and heads droop slowly till at (15) heads rest on desk.

Travelling Loan Exhibit

— OF —

Attractive, Anti-Alcohol CHARTS

ENTIRELY NEW

For Pupils Teachers, Professional
People, the General Public

EXHIBIT consists of 25 Colored Charts (framed, size 22 x 28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other infectious Diseases, etc. (See *JOURNAL* pp. 22, 27, 30). No objectionable details. Excellent for No-License Campaigns.

Send for Full Information as to Expense
and Plan for Use.

Scientific Temperance Federation

23 Trull St., Boston, Massachusetts

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

Purpose, Methods, Advantages, Membership

Its Educational Work for the Children

Purpose—To prevent intemperance by the promotion of wise, thorough instruction in the schools of the nation as to the laws of health and the dangers in indulging in the use of alcoholic drinks and other narcotics.

Methods—(1) To co-operate with existing organizations in securing this end. (2) To deepen public appreciation of the need of the instruction so that it will be popularly as well as legally required. (3) To bring to its support forces hitherto uninterested in it. (4) To make known the ascertained truth concerning alcoholic drinks and other narcotics so that the facts taught in the schools shall square with it.

Its Membership

Advantage—All members receive free *The School Physiology Journal*, notices of useful new publications, samples of leaflets or other information published by the FEDERATION.

Associate Membership is open to all who desire (1) to have fuller acquaintance with the alcohol and narcotic question which membership in the FEDERATION affords, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance. Anyone may become an Associate Member by the payment of the annual fee of \$2.00.

THE SCIENTIFIC TEMPERANCE FEDERATION has a unique place to fill; a distinct message and work. Its aims are fundamental and practical.

Address all contributions, correspondence, inquiries, etc., to THE SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull Street, Boston, Mass.

Combination Journal==Magazine Offers

Almost any Periodical published, furnished with Journal at Reduced Rates.

Let us know what Magazines you want and will make the

PRICE RIGHT

World's Work,	\$3.00	} OUR PRICE	\$3.00
Delineator,	1.00		
Altruist or Mother's Magazine	.50		
Physiology Journal . . . . .	.60	

Review of Reviews	\$2.00	} OUR PRICE	\$2.60
Success, or any			
Class A Magazine	1.00		
Physiology Journal . . . . .	.60	

Suburban Life	\$3.00	} OUR PRICE	\$3.00
Women's Home Companion	1.00		
or any Class A Magazine			
Physiology Journal, . . . . .	.60	

Delineator	\$1.00	} OUR PRICE	\$2.00
Everybody's	1.60		
Physiology Journal . . . . .	.60	

TEACHER'S GROUPS.

Normal Instructor,	\$.75	} OUR PRICE	\$1.00
School Physiology Journal, . .	.60		

Normal Instructor,	\$.75	} OUR PRICE	\$1.65
Primary Plans,	1.00		
School Physiology Journal, . .	.60		

CLASS A.

Success,	\$1.00	} Any 1 with JOURNAL	\$1.15
Woman's Home Companion, . .	1.00		
American (Leslie's),	1.00	} Any 2 with JOURNAL	\$1.80
Our Little Folks, (new)	1.00		
American Motherhood,	1.00	} Any 3 with JOURNAL	\$2.50
Primary Plans,	1.00		
American Boy,	1.00		
Altruist, *	1.00		

*Less 15c if this is chosen.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull Street, Boston, Mass.

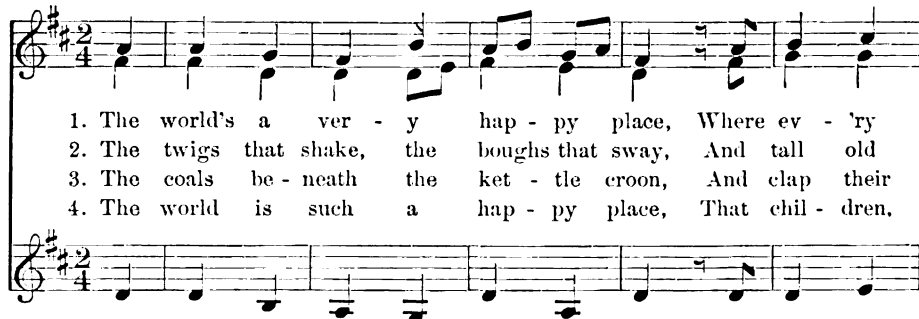
Please mention the JOURNAL when writing to advertisers.

Digitized by Google

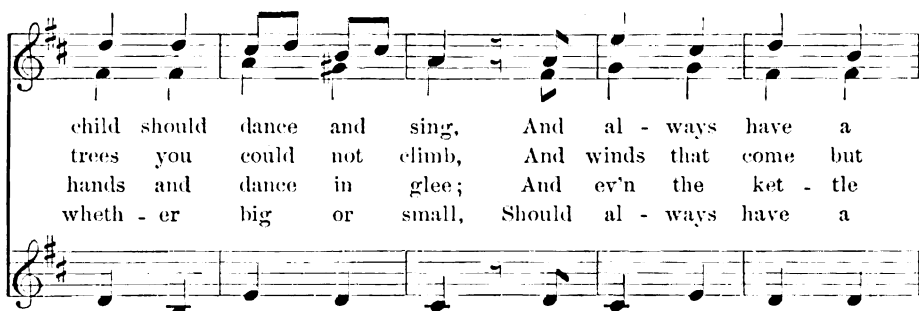
THE WORLD'S MUSIC.

GABRIEL SETOWN.

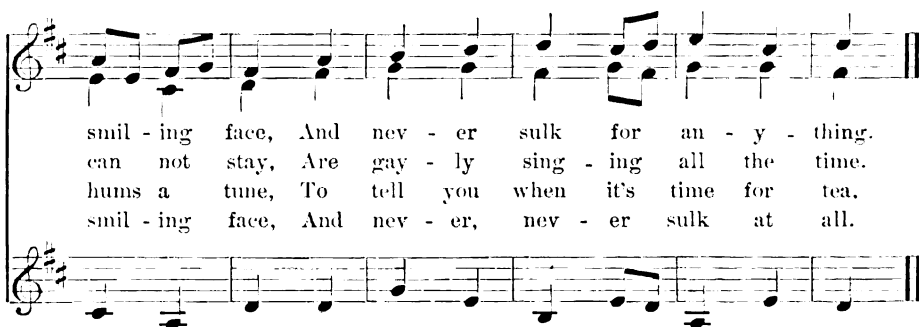
GEORGE HENRY HOWARD.



1. The world's a ver - y hap - py place, Where ev - 'ry
 2. The twigs that shake, the boughs that sway, And tall old
 3. The coals be - neath the ket - tle croon, And clap their
 4. The world is such a hap - py place, That chil - dren,



child should dance and sing, And al - ways have a
 trees you could not climb, And winds that come but
 hands and dance in glee; And ev'n the ket - tle
 wheth - er big or small, Should al - ways have a



smil - ing face, And nev - er sulk for an - y - thing.
 can not stay, Are gay - ly sing - ing all the time.
 hums a tune, To tell you when it's time for tea,
 smil - ing face, And nev - er, nev - er sulk at all.

Har., Fourth Reader.

(Copyrighted by American Book Company. All rights reserved.)

Through the courtesy of the American Book Company, we are enabled to present the pleasing song given above. It is taken from the FOURTH READER of the HARMONIC MUSIC SERIES, the advertisement of which appears elsewhere.

NEW SCIENTIFIC TEMPERANCE LEAFLETS

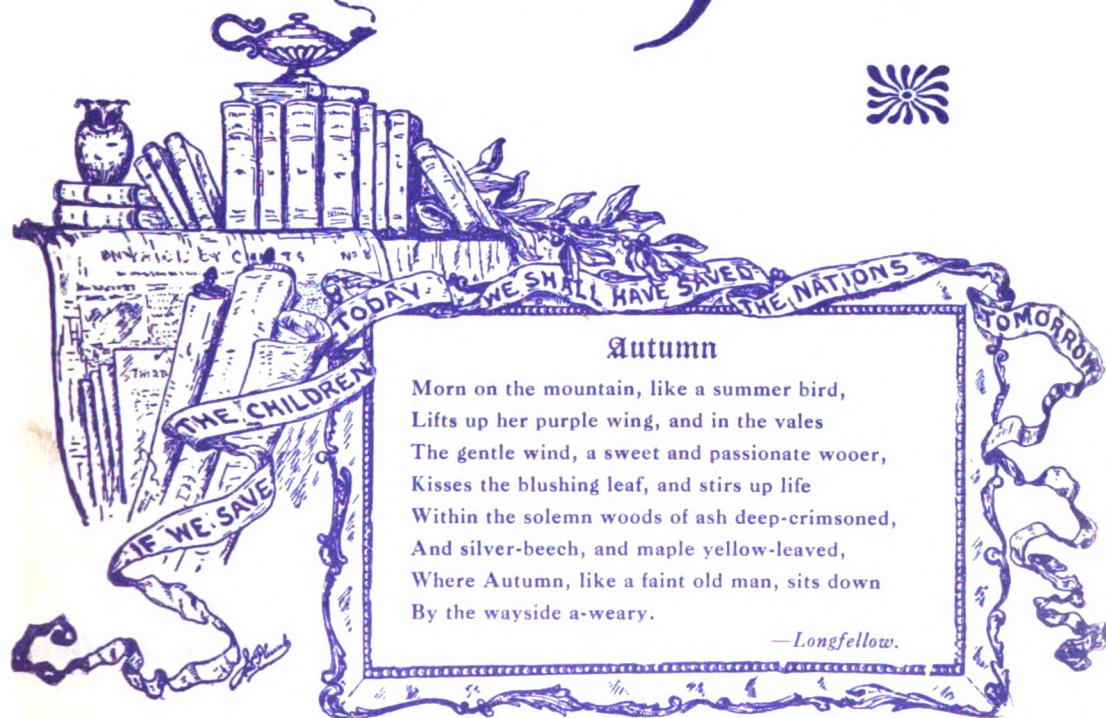
PRICE PER 100

Social Service in the Temperance Reformation	\$2.00
Important Place of Physiology in the School Curriculum	1.00
The Problem of Americanizing One Million Immigrants Yearly	.75
Scientific Temperance in the First Six School Grades	.30
International Course of Study	2.00
Alcohol as it Affects the Brain and Nerve Tissue	.75
Relation of the Drink Problem to the Perpetuity of the Nation	1.00
They Want Your Money (Popular Beer Leaflet)	.45
The Young Men and Tobacco	2.00
Why the Cigaret is Specially Harmful	1.00
The Boy and the Cigaret	3.25



972
Rec'd
OCT 24 1908
B. P. L.

THE SCHOOL PHYSIOLOGY JOURNAL



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVIII. NO. 2
NOVEMBER, 1908.

Copyright, 1908, by The Scientific Temperance Federation, Boston



HYDE'S PRIMER

25 cents

The idea of this book is to teach children to read by the use of familiar rhymes. For this purpose there have been selected a few of those most generally known, each of which is followed by a series of interesting and ingeniously varied lessons furnishing drill by the frequent repetition of the same words and phrases. The small vocabulary is developed slowly and progressively. Pictures furnish material for observation and language work. This primer is easy and workable, and intensely interesting to every child.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

Child's Book of Health. Revised Edition.

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

How to Keep Well. Revised Edition.

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition.

The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health.

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology.

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work.

GINN & COMPANY, Publishers

Boston New York Chicago London
San Francisco Atlanta Dallas Columbus

Two Great Popular Books

— ON THE —

Alcohol Question

Psychology of Alcoholism, - \$1.65
By Geo. B. Cutten, B. D., M. A., Ph. D.

The Saloon Problem, - \$1.10
By Prof. J. N. Barker, Best All-round Book on Economics and General Aspects.

Combination Offers

Psychology of Alcoholism,	1.65	} ONLY
Physiology Journal, one year,	.60	
		\$1.80
The Saloon Problem,	\$1.10	} ONLY
Physiology Journal, one year,	.60	
		\$1.40
Two Books and Journal, one year,		} ONLY
		\$2.65

Write for prices on any other desired combination.

A CORRECTION

The last number of the JOURNAL contained two unfortunate errors. On page 20, second column, third paragraph the word "wine" should have read "whiskey"; and on page 15, second column, fourth paragraph, the word "solved" should have been "slowed."

CONTENTS

	PAGE
The Psychology of Alcohol	33
Alcohol the Workingman's Antagonist	34
The Unseen Peril of the Drinking Cup	36
Story—Uncle Harry's Apple-Picking	36
Non-Alcoholic Drinks from Apples and Grapes	37
Wine to Drive out Drunkenness	38
Dangers in the Use of Beer	39
Wine a Peril to Childhood	40
How to Get Hold of a Boy	41
An Anti-Cider Entertainment	41
Editorials	42
Effect of Light Alcoholic Liquors on German School Children	43
Primary Lesson—What the Fairy Told the Queen	44
In the Land of the Vine	45
Effect of a Bottle of Wine a Day	46
Advanced Lesson—Wine and Cider	47
Which Pays Better, the Winery or the Manufactory?	48
Publications on the Alcohol Question	48a

THE BEST YET!

New Wine and Beer Leaflets

False Claims for Wine
Wine a Peril to Childhood
Wine Does not Drive out Drunkenness
Alcoholism in Wine-growing Countries
Commercial Fictions vs. Disinterested Facts about Beer.
Alcoholism and Tuberculosis

Prices very low — Send \$.05 for samples

RELIGION AND MEDICINE

By WORCESTER, McCOMB AND CORIAT.

The official book of the Emmanuel Church Movement.
Write for offer with JOURNAL.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVIII

BOSTON, NOVEMBER, 1908

No. 2

The Need of The Hour

By Edwin Parkham

GREAT is our heritage of hope, and great
The obligation of our civic fate.
Fling forth the triple-colored flag to dare
The bright untraveled highways of the air.
Blow the undaunted bugle and yet
Let not the boast betray us to forget,
For there are high adventures for this hour,
Toursneys to test the sinews of our power.
For we must parry—as the years increase—
The hazards of success, the risks of peace!

What need we, then, to guard and keep us whole?
What do we need to prop the State? We need
The fine audacities of honest deed;

The homely, old integrities of soul;
The swift temerities that take the part
Of outcast Right—the wisdom of the heart.
Brave hopes that Mammon never can detain,
Nor sully with his gainless clutch for gain.

We need the Cromwell fire to make us feel
The public honor or the public trust
To be a thing as sacred and august
As some white altar where the angels kneel.
We need the faith to go a path untrod,
The power to be alone and vote with God.

—Selected.



THE PSYCHOLOGY OF ALCOHOL

Condensed from a lecture by Dr. Emil Kraepelin, Professor of Psychiatry, University of Munich

PUBLIC opinion and governments that are ready enough to adopt strong measures against other dangers to public health are strangely tolerant of alcohol. The reason, no doubt, is, partly, the enormous business interests connected with its production and sale. But the tremendous increase in the use of this substance forces the conviction that the roots of the tolerance must lie deeper.

In spite of all the evils which it has caused, alcohol has enjoyed for a long time an extraordinary over-valuation, the reason for which is to be looked for only in its effect upon the mind, since all other influences are insufficient to account for its popularity and wide-spread use. What has given to alcohol its renown is the feeling of pleasure it engenders, the feeling that is associated with holiday relaxation, and, besides, the feeling of increased mental and physical working ability, which makes it seem to the worker, as well as to the invalid and convalescent, a valuable aid.

Experimental psychology alone can furnish reliable answers to the questions that arise here, and for twenty-five years, experimentation for this purpose has been in progress. The results of the experiments in most of which only from twenty-five to thirty grams* of alcohol were used, covered the widest possible range of mental operations and can be summarized as follows: Alcohol impedes the perception, comprehension and retention of

external impressions; it slows mental work especially in the association of ideas; and it renders mental operations shallow by the interposition of ideas suggested by habit or similarity of sound.

At the same time that the power of the muscles diminishes and the movements become slow and uncertain, the impulse to voluntary motion is less restrained, as is shown by the more rapid speech and the persistence of voluntary motions even in fatigue. With large doses, this excitement passes gradually into depression after twenty to thirty minutes. But even when the working ability has considerably diminished, the impression prevails that the work is particularly good.

The results of these experiments have been completely verified by a series of practical experiments so that the sum total of the effects of alcohol stand out incontrovertibly. Only one factor remains to be mentioned—the exuberant mood which goes hand in hand with this feeling of increased working ability. It is just this phenomenon which, in a somewhat varying form, accompanies the action of all other pleasure-poisons, while the feeling of augmented working ability must be designated a self-deception.

Not only every-day life, but the experience of numerous scholars, artists, and athletes of all kinds confirms this finding most unquestionably. The one who has taken the alcohol, to be sure, is himself scarcely or not at all conscious of the disturbance which the alcohol causes, but the unprejudiced observer recog-

*A little more than a pint of beer or than a quarter of a bottle of ordinary wine.

nizes unmistakably in the alcoholized subject the familiar symptoms of intoxication.

WHAT ALCOHOLISM REALLY IS

In intoxication, we have not increased working ability, but mental disturbance in which the conditions of unaccountability that stand out clearly are—loss of clear comprehension, inability rightly to weigh conduct, and weakened will-power. These conditions may continue from twenty-four to thirty-six hours after doses of from eighty to one hundred grams. If a new dose is taken in the meantime, the so-called cumulative effects of alcohol develop, and therewith the first indications of *chronic alcoholism—the setting in of the effects of a new dose before those of a previous one have entirely disappeared.* In the experiments, eighty grams of alcohol taken daily began to produce, after about ten days, a steady obvious decline in mental working ability.

The disturbances found in the drunkard are entirely similar to those present in the subject of the experiment, that is, weakening of the power of perception and attention, uncertainty of memory, diminished ability to do mental

work, increased fatigue, loss of will-power, energy, application and enterprise, and the high state of excitability under the influence of alcohol.

Furthermore, we meet here, in the happy mood of the alcoholized subject, the echo of the happy feeling and the unconsciousness of disease that are so familiar in the state of intoxication, that prevent the habitual drinker from taking care of himself, and that lead him to attribute his lack of prosperity to external circumstances.

These changes are to be found, to some degree, not only in the openly recognized drinker, but in the wide circle of people who use large amounts of alcohol regularly. Even in the schools it has been proved by numerous investigations that there is a close connection between backwardness and the frequent use of alcohol.

Finally, the continued action of alcohol besides laying the foundation for the development of a series of more severe and often incurable mental disorders, produces a tendency to mental degeneracy in the descendants.—*Translated for the SCHOOL PHYSIOLOGY JOURNAL.*

ALCOHOL THE WORKINGMAN'S ANTAGONIST

BY DR. RICHARD FRÖHLICH, VIENNA, AUSTRIA

ALCOHOL KEEPS WORKERS DOWN

WHAT is the significance of all this [crime, disease and death resulting from the use of alcohol] for the working-class? There is no doubt, first of all, that the well man is better fitted for every task than the sick man; that the man who has no beer-liver, beer-kidneys, or beer-heart can be used to better advantage in the work of organization and the struggle of the masses. Furthermore, there is no doubt that all the forces which keep the standard of living of the working class so low are strengthened by the consumption of alcohol; that poor nourishment is made a graver danger by the resort to alcohol, and that the evils of overwork are increased by it. *Everything that tends to plunge the workingman into misery is encouraged by alcohol; everything that is working to bring him out of his wretchedness is discouraged by alcohol.*

That form of alcoholism [moderate drinking] which is accepted as a matter of course by society also costs time, money, and men—and hence it must be combatted.

Everyone of you knows better than I the difficulties which organization meets among those workingmen who cling stubbornly to

their customs of drinking. It cannot be said in these cases that the condition of the class is the cause; for the member of the organization has the same wages at the turning-lathe as the non-member. But if the workman is addicted to drink, and seeks his pleasure in drink, all the arguments of the organized members of the class have little force with him, because he is not in a position to appreciate his situation as a member of the class to which he belongs. The rise in his spirits which is obtained at the expense of a few cents for alcohol prevents such appreciation. The brain, the prime factor in the battle for organization, is affected even by very small quantities of alcohol, and *against the alcoholization of the brain the worker must wage relentless war.*

A RUINOUS SATISFACTION

This is not to say, that every drop of alcohol leads immediately to a fixed craving for liquor. Such a condition is preceded by all the grades of exhilaration which prevent the unsatisfied man from realizing how sorely he needs all the real satisfactions of life. Alcohol makes a happy creature (often only a happy beast) out of an unhappy man. It brings him a short satisfaction which makes

directly against continuous toil for the satisfaction of his deep social needs. Alcohol deceives the man with the promise of a happy present, and hinders his realization of the weight of misery that is upon him—a realization which is the needful inspiration for the upward reach of the masses.

A FALSE CONTENT

But the most effective argument for total abstinence is that alcohol puts men in a good humor and makes them contented—the worst injury possible to the working-class. Alcohol holds men back from rousing themselves against the evils that oppress them, by dulling their senses to the realization of those evils. It makes men satisfied, and *we need dissatisfied men*. There is no easier way possible to make the unfortunate man content with his

of the present.” I believe the sentence could be reversed and still be as true. The weapons of the struggles of the present are of value only so far as they give guarantee of fulfilling our longings for the future. In other words, the significance we give to the weapons of the present depends on their relation to our ultimate ideals of civilization as well as on their efficacy in the immediate struggle before us. *We want to create a new social order; to give the world a new face!* To lay the foundations for the new society is the task of political and industrial organization—and there is no greater deterrent to the accomplishment of that task than alcohol.

THE NEW WEAPON—SOBRIETY

In building the new mansion of the future we think also of the men who are to dwell in it. Does it not bring a blush of shame to our



misfortune than a couple of glasses of beer. Every disagreeable thought vanishes then, because the cortex of the brain is deadened, and the man is lulled into a soporific state. *We need men who are awake! The alcohol which puts men to sleep is an enemy to labor and a bitter enemy to the laborer, though it come under the deceitful mask of a friend.* We must fight it to the death; and the only weapon is the propaganda of total abstinence. Total abstinence, I say, is the only platform on which we can get a clear, simple, practical program for the organization of the masses.

TO GIVE THE WORLD A NEW FACE

Adler once wrote these profound words, "The dreams of the future have value only so far as they give us strength for the struggle

cheeks merely to imagine that the men of the future society will be contented because they are *intoxicated!* Contentment in that new order will arise from a sound brain and the satisfaction of the rational desires which proceed from it. We have enough retarding forces to contend with in our struggle for this ideal of the future generation. One such force we are able today to overcome if we will. That is *alcoholism, the last refuge of Philistinism and stupid conservatism.* *If we really want the new world, we must provide the new men to make it.* The program of total abstinence does not set new ideals for us, but it gives us a new weapon, sharp and effective for the conquest of our old ideals. The responsibility is upon us to use this weapon. Let us do it!—*Christian Socialist.*

THE UNSEEN PERIL OF THE DRINKING CUP

THE evidence condemning the use of the common drinking vessels upon any occasion, whether at school, church or home, is derived from three sources: 1. The frequent presence of disease-producing bacteria in the mouth; 2, the detection of pathogenic germs on the public cups; and 3, the discovery that where a number of persons drank from a cup previously used by the sick, some of them became ill.

Recent investigations show that the germs of diphtheria and grippe frequently remain from one to three months in the mouths of the patients after they have recovered from the disease. The Minnesota State Board of Health demonstrated that in over half of the diphtheria cases virulent germs remained in the nose and throat of the patients three weeks after recovery. Of the 2,038 mild sore throats examined in the school-children of Hartford, Conn., 591 were shown to be due to the true diphtheria germ.

It is an established fact that a considerable number of well persons harbor in their mouths the germs of grippe, pneumonia, diphtheria and tonsillitis. Examination of 4,250 persons by the Massachusetts Association of the Boards of Health showed that over one hundred of them carried in their mouths virulent diphtheria germs. Pennington in 1907 found virulent diphtheria bacilli in nearly 5 per cent. of a large number of apparently healthy school-children in Philadelphia. The average results of a large number of investigations demonstrate that nearly 1 per cent. of well persons carry in their mouths true diphtheria germs. In Boston, 60 per cent. of all cases of common catarrh examined showed grippe bacilli.

During the past six months I have investi-

gated by means of direct microscopic examination, by cultures, and by guinea-pig injections, the deposits present on various public-drinking vessels. Cup No. 1, which had been in use nine days in a school, was a clear, thin glass. Counting the cells present on fifty different areas on the glass as seen under the microscope, it was estimated that the cup contained over 20,000 human cells or bits of dead skin. As many as 150 germs were seen clinging to a single cell, and very few cells showed less than 10 germs. Between the cells were thousands of germs left there by the smears of saliva deposited by the drinkers. Not less than a hundred thousand bacteria were present on every square inch of the glass. Most of these were of the harmless kind abundant in the mouth, but some were apparently the germs of decay feeding upon the bits of the human body adhering to the cup. In order to determine how much each drinker is likely to leave on the cup, I requested ten boys to apply the upper lip to pieces of clean, flat glass in the same way as they touched the cup in drinking. These glass slips showed an average of about 100 cells and 75,000 bacteria to each slip.

More than ten thousand churches have now adopted the individual communion-cups, and many schools either provide a sanitary drinking fountain or require the pupils to use individual cups. Wherever hygienic measures have been adopted in a community, sickness and death have decreased. By living more in accordance with the rules of hygiene, New York City reduced her death rate from 25 per thousand to 18 per thousand during the period from 1890 to 1905, and Chicago, from 19 to 14 per thousand.

—*Technical World Magazine.*

Uncle Harry's Apple-Picking

By Bertha Burnham Bartlett

IT was the greatest "apple year" that had been for ten years. The trees that had been a mass of pink and white in May were fairly bending now beneath the heavy load of red and yellow fruit which had replaced the fragrant blossoms. Strange to say, however, Uncle Harry hardly seemed pleased at the prospect of having so many apples.

"It will cost as much to get them picked as I can get for them," he said soberly one afternoon to Aunt Joan. "I'm just going to shake the trees, and then pick the windfalls and

send to Smith. He'll pay ten cents a bushel and that's better than trying to find any other market."

Aunt Joan nodded. "Yes," she agreed, "perhaps that will be best. And the children can help you. Pay them five cents a bushel for the work, and you'll clear five cents."

"It isn't as if we had to depend upon the fruit for our living," laughed Uncle Harry. "See here, youngsters, how would you like to earn your own Christmas money this year? If you'll clean up the orchard, and not leave

a lot of 'em on the ground, I'll pay you five cents for each bushel and then I'll let you sell them and have the proceeds. Tom can drive the horse down to Smith's, and they'll do the unloading for you. That will mean about thirty-five cents a barrel, and there must be fifty barrels that you can have. Well?"

"It'll be the loveliest!" ten-year-old Millie declared, her eyes shining as she began to use the knowledge she had been gaining in "Room 4" that term. "Thirty-five multiplied by fifty will be—six—seventeen hundred and fifty, and that divided by three—o-o-h! five, and most six, dollars. G-lorious, Uncle!"

"And I can drive like a book," Tom declared proudly, "and Ben and I are great on picking up apples. Shall we begin today?"

All the long Saturday afternoon they toiled away, filling the bags which Uncle Harry provided; and then, just at sunset, when Patrick had finished milking, with his help the heavy sacks were lifted into the farm wagon, and the three children drove proudly down to Smith's.

They were very sober little folks upon their return, and Aunt Joan, thinking that the unaccustomed work was the cause of their quietness, hurried them off to bed.

With the morning, however, Millie, who was usually spokesman for her twin brother and little Ben, explained the matter.

"There was such a high pile of apples," she said soberly, "I guess it was 'most as high as this house, Uncle Harry. And when Tom asked Mr. Smith what he was going to do with so many apples, what do you s'pose he said? You couldn't guess. He's going to make cider, Uncle Harry! And you know Papa said—before he and Mama went to heaven last spring—that cider made folks drunk, and made us promise we'd never touch any. And so—"

"And so you don't want to help about having any made?" smiled Uncle Harry, who cared very much indeed for the three little fatherless and motherless children. "I don't blame you, darlings. If I had thought, I never would have asked you to do this work. Yet, my dears, what am I to do with all the apples?"

"We thought of that," Millie said brightly. "They've got to be picked up, of course, and we thought how. There's just quantities of boys and girls up on the 'Island' who never have seen the country, and who never have any apples, only horrid ones that they have to pay a cent apiece for. If they could only come and pick 'em up for you, and then—"

Uncle Harry whistled softly. It would mean expense to get the "Island" children

into the country, and bother!—what a bother they would be! Yet, remembering that his brother, the father of Millie and Tom and Ben, had sacrificed even his life for these same "Island" people, he made a sudden resolution.

And this was the reason that a week later fifty boys and girls from the city came, under the care of a deaconess, to Uncle Harry Blaisdell's farm, where they picked up apples during the morning, stopping twice, before the dinner-bell called them to dinner in the great barn, to eat Aunt Joan's sandwiches.

A week later the deaconess in charge of the "Home" received notice of the arrival of fifty barrels of apples, which she was authorized to give away, or to sell at not more than five cents a peck, to the poor people who still loved and remembered the city missionary who had lived among them.

It was such a beautiful work! And Millie and Tom and little Ben, although they had no shining dollars to show for the work of clearing the orchard of apples, had the loveliest times all winter just imagining how happy the "Island" children were in having those apples which they had themselves picked.

And best of all, Uncle Harry decided that he would never send any more apples to be made into cider.—*Sunday School Times*.

NON-ALCOHOLIC DRINKS FROM APPLES AND GRAPES

UNFERMENTED grape juice has long been known as a healthful and delicious beverage. It is not so generally known that apple-juice may be preserved from fermentation in a similar way by pressing the juice from sound apples, heating it thoroughly and sealing while hot in jars or bottles. If the latter are used, care should be taken to sterilize, by heating, the corks as well as the bottles. Seal with paraffine.

The United States Department of Agriculture has just issued a suggestive bulletin on "Unfermented Apple-Juice" (No. 118), which shows that by a simple process of sterilization this juice may be made into a safe and delicious drink. The Bulletin not only describes the process, but indicates the kinds of apples that gave the most satisfactory results.

Apple or grape water makes a palatable drink for invalids. Wash, pare, core and cut one large juicy apple, add two cups of water and simmer until tender, strain, add sugar, cook five minutes, chill and serve. If the apple is not tart, a small amount of lemon juice may be added. Grape water is similarly prepared, using one and one-half cups of boiling water for two cups of grapes.

WINE TO DRIVE OUT DRUNKENNESS

BY E. L. TRANSEAU

THE evil of drunkenness is soon to disappear forever from America,—so we are told by the wine-growers. They are going to drive it out by teaching the American people to drink wine as they do in France. To show what a good thing wine has been for France, they tell us that it has there reduced the consumption of *alcoholic liquors* to only eight and one-half gallons per capita. But by alcoholic liquors they mean only brandy, whiskey, and other distilled liquors, not wine.

But this is not all. They contrast this consumption in France with the consumption of alcoholic liquors in Great Britain, where, they say, it is over thirty-eight gallons per capita, and in Germany, where it is thirty-four gallons. These figures can only be obtained by including beer as an alcoholic liquor. But if beer is included, how can wine be excluded when in its lightest forms it has a larger percentage of alcohol than the heaviest brands of ordinary beer. Such juggling with facts and figures is out and out deception.

Alcohol is Alcohol whether in wine or in whiskey. The question at issue is, how much alcohol do the drinkers imbibe.

The following table gives the relative amount of alcohol consumed per capita in the different countries. It is obtained by adding the percentage of alcohol contained in the various beverages consumed.

Country.	Litres of alcohol*
Belgium,	12.58
France,	12.57
Spain,	12.05
Denmark,	10.87
Switzerland,	10.73
Italy,	10.35
Portugal,	10.10
Roumania,	9.74
Germany,	9.25
Servia,	8.46
Great Britain,	8.17
Austria,	7.99
United States,	7.95
Holland,	6.30
Russia,	5.21
Sweden,	4.43
Canada,	3.32
Norway,	2.66
Finland,	1.84

France, it will be seen, stands with Belgium, the largest per capita beer-consuming country, at the head of the list, the difference being only one-hundredth of a litre.

An alarming increase in spirituous drinks in France noted by her own scientists and public officials, effectually disproves the repeated assertions of the American wine interests that "in the wine-growing countries of

Europe where women and men drink wine like water the use of spirituous liquors and alcoholism are little known."

Both are altogether too well known: "The French people, who were formerly large consumers of light wines, are turning to stronger beverages, including absinthe, and the number of suicides caused by alcoholism is increasing in corresponding ratio.

"France is one of the countries where the most alcohol is consumed, and it is the only country, with the exception of Belgium, where the consumption continues to increase. . . . A feature of the increase in the consumption of alcohol is that less wine is now drunk. In 1873, 200 litres of wine were drunk per inhabitant in France; in 1885, only 75 litres were consumed. Alcohol (that is spirituous drinks) has taken the place of wine, and among the alcoholic beverages that now have a hold upon the masses is absinthe. . . ."²

Encouraging the use of wine does not check alcoholism. A report rendered the Académie de Médecin in 1907 revealed the following facts as to the part played by alcoholism in "wine-drinking" France in causing deaths in eleven hospitals in Paris.

Total number of deaths (10-15 months)	1,500
Alcohol, one cause of death,	33.81 per cent.
Alcohol, principal cause of death,	10.20 per cent.
Alcohol, accessory cause of death,	23.61 per cent.

The influence of alcohol on mortality was still greater in the insane asylums. There alcohol was the cause of disease and death in nearly 50 per cent. of the male cases, and in 16.6 per cent. of the female cases.³

If there were any truth in the statement that the free and universal use of wine would keep out the stronger liquors and prevent alcoholism, there has been ample opportunity in France to prove it. Instead, the exactly opposite result has occurred. The French government has encouraged the use of wine. It has removed the tax, and has done all it can to promote wine-drinking, and now stands perplexed and baffled because alcoholism and the consumption of stronger and stronger liquors strides on. Verily, not by Beelzebub is Beelzebub cast out.

REFERENCES

- (1) Toronto Pioneer, October 12, 1906.
- (2) U. S. Consular Report, September, 1906.
- (3) Paris Correspondent of British Medical Journal, December 7, 1907.

Happiness is the feeling we experience when we are too busy to be miserable.

*A litre is practically one quart.

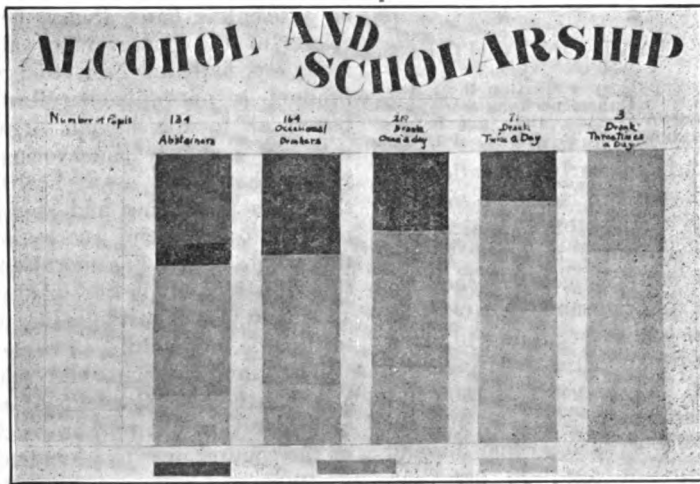
THE EFFECTS OF LIGHT ALCOHOLIC LIQUORS ON GERMAN SCHOOL CHILDREN

BY HENRY SMITH WILLIAMS, M. D., LL. D.

ALL the evidence goes to show that no mind is capable of its best efforts when influenced by even small quantities of alcohol.

Some doubly significant observations as to the practical effects of beer and wine in dulling the faculties were made by Bayer, who investigated the habits of 591 children in a public school in Vienna. These pupils were ranked by their teachers into three groups, denoting progress as "good," "fair," or "poor," respectively. Bayer found, on investigation, that 134 of these pupils took no alcoholic drink; that 164 drank alcoholics very

nately, would it be possible to gather statistics comparable to these as to the effects of alcohol on growing children, for the Anglo-Saxon does not believe in alcohol for the child, whatever his view as to its utility for adults. The effects of alcohol upon the growing organism, have however, been studied here with the aid of subjects drawn from the lower orders of the animal kingdom. Prof. C. F. Hodge, of Clark University, gave alcohol to two kittens, with very striking results. "In beginning the experiment," he says, "It was remarkable how quickly and completely all the higher psychic characteristics of both the kittens dropped out. Playfulness, purring, cleanliness and care of coat, interest in mice, fear of dogs, while normally developed before the experiment began, all disappeared so suddenly that it could hardly be explained otherwise



Darkest Shade—Scholarship very good.
 Medium Shade—Scholarship fair.
 Lightest Shade—Scholarship poor. } Statistics of E. Bayer, Vienna.

seldom, but that 219 drank wine or beer once daily; 71 drank it twice daily; and three drank it with every meal. Of the total abstainers, 42 per cent. ranked in the school as "good," 49 per cent. as "fair," and 9 per cent. as "poor." Of the occasional drinkers, 34 per cent. ranked as "good," 57 per cent. as "fair," and 9 per cent. as "poor." Of the daily drinkers, 28 per cent. ranked as "good," 58 per cent. as "fair," and 14 per cent. as "poor." Those who drank twice daily ranked 25 per cent. "good," 58 per cent. "fair," and 18 per cent. "poor." Of the three who drank thrice daily, one ranked as "fair" and the other two as "poor." As Aschaffenberg, from whom I quote, remarks, detailed comment is superfluous; the figures speak for themselves.

Neither in England nor America, fortu-

than as a direct influence of the alcohol upon the higher centres of the brain. The kittens simply ate and slept, and could scarcely have been less active had the greater part of their cerebral hemisphere been removed by the knife."—*McClure's Magazine*.

"Sing? Why yes to be sure;
 We shall better endure
 If the heart's full of song
 All day long."

The most convincing demonstration of the evil effects of alcohol upon the human family that I have ever seen was the exhibit made by the Scientific Temperance Federation at the World's Centennial Temperance Congress at Saratoga, June, 1908.—E. H. Emery, Field Sec'y Christian Civic League, Maine. (See p. 48a.)

The JOURNAL constantly grows better.—I. L. KAN.

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

Four things a man must learn to do
If he would make his record true.
To think without confusion, clearly,
To love his fellow man, sincerely;
To act from honest motives, clearly;
To trust his God, and heaven, sincerely.
—VAN DYKE.

THE EARLY HAND ON YOUTH

"In spite of our compulsory education laws, the education which a large number, perhaps a majority of American children receive, they get before they are ten years old."—J. F. Gordy, Ph. D.

THE importance of early education of children and youth to habits of sobriety is shown by a study of 275 alcoholic cases in Bellevue Hospital reported in the *Hospital Medical and Surgical Report* for 1904, by Dr. Alexander Lambert. Of 259 instances where the age of beginning to drink was known, four began before six years of age; 13 between 6 and 12 years or the sixth school year; 60 between 12 and 16; 102 between 16 and 21; 71 between 21 and 30, and eight after 30 years of age; 30 per cent. began before the age of 16, and over two-thirds—i. e., 68 per cent. began before 21 years of age. If these statistics are representative of general conditions, they indicate clearly that preventive temperance to be effective must be begun at an early age and carried on thoroughly through childhood and youth.

The reasons for acquiring the habit are significant in indicating lines along which preventive work should be done. False social ideas led to drinking for the sake of sociability in 53 per cent. of the cases; a desire to dull the sense of misery, as suggested by Prof Munsterberg, in 12 per cent; the use of alcohol as medicine in nine per cent; parental example or influence in five per cent.

Most of the alcoholics, Dr. Lambert found, drink for the narcotic effect, either to obtain the feeling of well-being and indifference to their environment or to seek oblivion, and like all narcotics, alcohol begets a craving for more.

The training of children and youth to sobriety must therefore, definitely teach the dangers in alcoholic drinks due to their nature, must emphasize the value of abounding health based upon intelligent observance of hygienic laws, must stimulate courage and self-control in meeting temptation, and fill life with resources so that youth will not be dependent upon low types of sociability for enjoyment. The complementary external conditions will remove temptations to drink from the way of young people, secure healthful domestic and public environment, and afford innocent opportunities for recreation and fellowship.

A SQUARE DEAL FOR THE PUBLIC

IF any further proof were needed of the fundamentally correct position that the argument for abstinence rests largely upon a scientific basis, it may be found in the efforts of the purveyors of alcoholic beverages, especially of beer, to prove that their product is not only harmless but actually beneficial to the human organism. When they are zealously endeavoring to teach the public that "beer is as healthful as milk," that it is nourishing and strengthening, it is no time to be wasting energy in claiming that this whole matter is a moral and not a scientific question. It is like attempting to defeat an enemy who is in the valley by firing at the top of the mountain.

The announcement was made two years ago that the advertisements of *one brand* alone of whiskey would appear in the newspapers of the country over two hundred million times in 1906, and yet we are sometimes told that six or eight lessons a year in school concerning the dangers of alcoholic drinks are too many.

The truth of the matter is that this specious kind of public education, conducted as is well known by an organized liquor educational bureau, is not giving the public "a square deal." The people are being cheated out of their rights to the truth on this subject.

Just as far as the school, the church, and the press, by a policy of inactivity, are leaving the people uninformed as to what the truth is, they are participating in responsibility for the unhappy results.

The day when every school and every teacher in the country is teaching frankly and conscientiously the actual facts about the nature and effects of beer and other alcoholic drinks, that day the argument that beer is a "healthful, nourishing, harmless, temperance drink" will be relegated with all its consequences to the limbo where so many of the arguments for these drinks are already safely reposing.

The Century's Call

By Margaret E. Sangster

Deep unto deep, it calleth,
The century's dominant cry,
Over the desert and over the plain,
Over the peak and the mountain chain,
Under the thrilling sky,
The voice of mighty peoples,
And the tocsin of wars and woe,
From East to West 'tis sounding,
And a man must rise and go.

A man must fear no peril,
He must ride like knight of old:
To tourney and tilt, with a good right hand,
That cleaves to the hilt for the love of the land,
And here's to the soldier bold!
Who is pure of thought and action,
Who is ready to serve his age,
Who cares for the things he doeth,
And not for the soldier's wage.

Deep unto deep, it calleth,
The century's urgent cry.
Splendid and strong is the century's song,
Valor and love to the battle throng,
And it may not pass you by.
From East to West 'tis sounding,
The call for brave and true.
O lads with pulses bounding,
That cry is meant for you.

Wherever the need is greatest,
Wherever the sin is worst,
Over the city's thousands thick,
Over the deserts of stone and brick,
Over the lands accurst,
The cry for help is pealing,
Bitter with want and woe.
O brother, if you hear it,
A man must rise and go.

—Selected.

THE DANGERS IN THE USE OF BEER

By Dr. Hugo Hoppe, Nerve Specialist, Königsberg, Germany

[CONTINUED FROM SEPTEMBER-OCTOBER JOURNAL]

IT is true that the diseases caused by beer are not, in most cases, so manifestly serious as those caused by the distilled liquors. Whiskey, brandy and the others of this class which contain large amounts of alcohol do greater injury to the organs with which they come in contact on their way through the body, the stomach and the liver, than does the less concentrated beer. For this reason, diseases of the stomach and liver attack the whiskey drinkers earlier and more frequently than they do the beer drinkers. The well-known liver cirrhosis is pre-eminent-ly a disease of the whiskey and wine drinker.

Yet it is not unusual in heavy beer drinkers. In the medical clinic of Prof. Pibram in Prague, the center of Bohemian beer, among 483 beer-drinking patients (who took over five quarts a day) there were 39 cases of cirrhosis, while among the 520 whiskey drinkers only three cases were observed.

Delirium tremens, also, is relatively infrequent among beer drinkers. Yet with the increasing use of beer, this, as well as other mental diseases due to alcohol, are slowly on the increase. Jacobson found in the general hospital in Copenhagen among 247 cases of delirium tremens 15 (6 per cent.) who were exclusively beer drinkers. In the medical clinic of Dr. Pibram, in Prague, among 483 heavy beer drinkers were found 39 cases (8 per cent.) of delirium tremens, and among 520 whiskey drinkers only 21.

In every 1,000 in the general deaths of

adult men in Prussia in 1901 there was an average of 3.8 cases of delirium tremens; but among every 1,000 deaths of whiskey drinkers there were 8.2 cases, and in every 1,000 deaths of beer drinkers there were nine cases of delirium tremens.

The alarming increase of mental troubles and especially of those due to alcohol, is therefore sufficiently explained in the increased consumption of beer.

Chronic alcohol poisoning of the brain, the so-called chronic alcoholism, runs a more rapid course, and is more intensive with whiskey drinkers than with beer drinkers, in whom the symptoms appear more slowly and are, therefore, less conspicuous.

Yet of 478 drinkers received in the Ellikon institution for curing inebriety (Switzerland) between 1887 and 1893, there were ten beer drinkers and 100 beer and wine drinkers. In all there were 133, or 39 per cent., who were drinkers of fermented liquors solely. But among those who are publicly known to be drunkards and who need institutional treatment in order to be cured, there are thousands and tens of thousands who injure their mental functions and sink their mental and moral level by regular daily beer drinking.

Because the symptoms of chronic alcoholism appear more slowly and are less readily observable in the heavy beer drinker than in the whiskey drinker, the former is far more frequently met than the latter. But thousands and tens of thousands of men who take their

daily pint are rendered stupid, silly, and dissolute by beer. They will, probably, still transact regularly the daily business or routine of office to which they have become accustomed, but without special exertion, half automatically like machines. For any further exertion, however, for improvement or for more productive activity they lack the desire, the initiative, and the energy. The beer makes them stupid and heavy; it destroys the power and buoyancy of the mind, blunts the higher feelings and interests, and causes the gradual

giving up of aspirations and ideals. Enthusiasm and devotion dwindle away to give place to self-indulgence, indolence, boasting and egotism. The term "beer-philistine" so often heard among observing people, is here well applied.

These are the characteristics of the so-called "moderate" use of beer, while those caused by "excessive" use differ very little from those of chronic alcoholism caused by whiskey.—*Translated for the SCHOOL PHYSIOLOGY JOURNAL.*

❖ ❖ ❖

The day is surely coming in America when from the school-houses on the hill-tops and in the valleys all over the land will come the trained haters of alcohol to pour a whole Niagara of ballots upon the saloon.

—Mary H. Hunt, 1886.

❖ ❖ ❖

WINE A PERIL TO CHILDHOOD

BY CORA FRANCES STODDARD, A. B.

I*MPERILS the Growth of Children.* A conscientious parent anxiously watches and provides for the steady, healthful growth of his children. Effective growth is dependent upon vigorous activity in the body cells. Anything which tends to lessen this activity interferes with proper growth. Alcohol which all wines contain (8-20 per cent.) may impair growth by lowering cell vigor and also the child's ability to absorb nourishment. It should be remembered that *cider* may be called "Apple-wine," and sometimes contains as much as 10 per cent. of alcohol so that the use of cider may be open to many of the same dangers as the use of the wine made from grapes.

Prof. Kassowitz of Vienna from his large experience of children's diseases, directly attributes many of the cases of loss of appetite and digestive failure to the light wines given in small amounts to children at meal times by their parents. Many of these wines are astringent and constipating, and are by no means such simple drinks as they seem.

Opens the way to Infectious Disease. The careful parent guards his child against infectious diseases. The harmful effects which small quantities of alcohol have upon ability to resist disease have recently been proved by Prof. Laitinen of Helsingfors. He gave large numbers of rabbits and guinea pigs doses of alcohol that would correspond

to that found in less than a quarter of a pint of wine a day for an adult. A second group of animals were treated the same way except that they had no alcohol.

After some months, all the animals were inoculated with diphtheria toxin. Those that received the alcohol proved less able to resist disease than those which received none.

If the same results follow in human life, it would mean that a child regularly receiving a wineglassful of wine a day, if exposed to diphtheria, would be more likely to take the disease, to have it more severely, to take longer in recovering, and to be less likely to recover than another child under the same circumstances in every way who took no wine.

Prof. Demme of Zurich actually found that in an epidemic of diphtheria in the Children's Hospital, the children who had previously been accustomed to the daily use of alcohol with meals were much less able to resist diphtheria, and died from it in a greater proportion than did the children who had been brought up without alcohol.

This is a kind of evidence that every intelligent parent can understand, and of which he can see the seriousness.

Injures School Work. About two years ago, Dr. Paul Bergman, principal of a school in Germany obtained consent of the parents of some of his pupils to make a test of a

small quantity of light wine upon the mental working ability of a class of girls, 13 to 15 years of age. It was a risky experiment in view of the danger of creating the alcoholic appetite, but it showed how even small quantities of wine impaired mental ability. Shortly after taking half a wineglassful of Moselle wine (8 per cent. alcohol), the girls were given a dictation exercise in which they were asked to supply words purposely omitted. After taking the wine, the girls made from one to seven more errors or failures than they did before; it took them longer to think, and the writing, spelling and punctuation were considerably worse. There were also more erasures. Parallel experiments were tried with boys, giving them beer instead of wine, with similar results.

Tends to Establish the Alcoholic Habit. Wine on the home table not only may do physical harm to the child, but it may lay the foundation of a compelling alcoholic appetite or craving for alcohol. The narcotic, alcohol, which it contains "has the power when taken frequently, even in small amounts to create a diseased craving for more which may become uncontrollable and its gratification destructive." Such is the united testimony of science, of the sorrowful history of the centuries, and of everyday observation.

Familiarity with wine at home tends to breed contempt of danger in alcoholic drinks in society, club or saloon. The father and mother who place wine before the children or youth in their homes, are not only possibly injuring them physically, but are establishing the habit of the use of alcohol which will actually make it easier for them to indulge in other alcoholic drinks in other places.

It is not only the evil that men *do* that lives after them. The evils that grow out of carelessness, ignorance, or selfishness may also throw their shadows far into the future. Parents who drink wine themselves are taking a drug—alcohol—that tends to weaken their perception and to make them careless of the best interests of their children. But those who give wine to their sons and daughters are doing that which endangers the growth, health, mental activity and character of their own and their children's children.

There is no searcher after knowledge to whom the truth is so momentous as to the parent and guardian of childhood.

REFERENCE

(1) Alcohol and the Human Body. Sir Victor Horsley.

HOW TO GET HOLD OF A BOY

THE teacher or friend of school boys who is wrestling with the cigaret or other problems of boyhood and youth when advised, as is frequently the case, to use personal influence with the boy, sometimes is inclined whimsically to recall the old recipe which began, "First catch your hare." The *Journal of Education* has furnished some helpful suggestions for the first step in the following admirable hints which may be summarized in three words—tact, sympathy, perseverance:

(1) Study the boy's parentage and home influences. (2) Observe closely his likes and dislikes, aptitudes, temper, companions, reading. (3) Converse often with him in a friendly way. (4) Ask as to his purposes and ambitions. (5) Lend him books. (6) Interest yourself in his sports. (7) Speak to him of the lessons in the lives of good men. (8) Tell him of your own struggles in boyhood or girlhood, with adverse circumstances. (9) In brief, be his friend; when he leaves school and neighborhood, keep informed as to his whereabouts by correspondence.

AN ANTI-CIDER ENTERTAINMENT

DECORATE the hall or schoolroom with green boughs and ripe fruit to give the effect of apple-trees in full fruit. Display all the varieties of apples that can be obtained in the vicinity. If supper is served, let the menu include apples in prepared dishes, of which a great variety is possible: salads, puddings, apple-cake, jellies, natural apple-juice (see p. 37), etc.

The following program will be suggestive: Scripture passages on the fruits, grouped and recited.

Recitation—"Autumn," Longfellow (earlier poems.)

Paper—"The Apple, Its History and Tradition."

Reading or Recitation—"The Hesperides," Tennyson (Parts I and IV.)

Paper—Some of the Dangers of Cider Drinking (JOURNAL, Nov., 1907)*.

Recitation—"Habit-Breaking," John Boyle O'Reilly.

Motion Song by Children—"The Apple-Tree."*

Reading—Uncle Harry's Apple Picking (p. 36.)

Story telling "What the Fairy Told the Queen." (Page 44.)

Circulation of pledges for signature.

*May be obtained from the Journal, \$0.05.

Pay taxes in money not in boys



“And Summer from
her golden collar slips
and strays thro stubble
fields.”



Primary Lesson—What the Fairy Told the Queen

THERE was once a country governed by a good Queen who loved her people and tried to help them to be good and happy. Once each season she held a festival and invited the poor people as well as the nobles and scholars. Usually there were sports all day with plenty of beverages to drink, and in the evening a grand feast. The autumn festival came after the grapes were ripe, and then there were games and a feast every day for three days. At their evening feasts, roasted fat oxen and sheep were served and the cooks made all kinds of delightful things to eat. While the guests ate and drank, there was fine music, and they were permitted to take home delicacies to those who were too poor or too sick to come.

You would think that these would have been merry times, and so they were except for one serious drawback. At all of these feasts a strange sickness broke out among the guests. Some would become dizzy and reel and stagger as they walked, and thus it often happened that the young men lost prizes they had expected to win in the games. Some would rush wildly about, shouting and waving their arms and acting as if they were crazy. Others would fall from their seats and lie under the table until the attendants came and carried them off to bed. It was very painful to see these sick ones, and at the great autumn festival it was specially bad, for although these people all thought they were enjoying themselves, the strange sickness affected nearly everyone. Many did not get over it for some time after they got home.

After a while, as the sickness seemed to increase all the time, the Queen grew much troubled over it. She asked the court physi-

cians about it but they could not tell the cause nor what would prevent it. They thought she was foolish to mind so much, because, they said, everybody had a good time and all got over the sickness.

But she was not satisfied and called the magic men. They studied their books of magic and the stars and many other things that had nothing in the world to do with it, but the magic men had to give it up.

THE VISIT TO THE FAIRY

Then the Queen thought of a wise old Fairy who lived away out in the forest. So she called her horsemen, and away they rode for a whole week, till at last they reached the great hollow tree covered with grape-vines in which the Fairy lived.

The trumpeters blew seven blasts on their silver trumpets. Just as they finished, the vines rustled and opened about level with the horses' heads.

There stood the Fairy, not larger than your thumb, and dressed in purple and green that looked like the grapes and their leaves. The Queen saw her at once and bowed very low, laying a beautiful present at her feet.

“Dear Fairy,” said the Queen, “we are in great trouble. My people have a strange and dreadful sickness which grows worse and worse. Can not you help us to find the cause and how to stop it?”

The Fairy looked sad. She did not wish to hurt the Queen's feelings, but she knew she must, and she said gently but reproachfully:

“It is you, O Queen, who are the cause of all this sickness. You yourself give them a poison that makes them ill.”

“I!” exclaimed the Queen in astonishment. “I keep none but the best cooks in the king-

dom. My oxen and sheep are fattened on the best hay and grain by my own Imperial Cattle Fatteners. I have a special Food Inspector to see that the flour and sugar and other foods are pure and good. I serve none but the best wines made in my own vineyards by my own Vine Dressers. The cider is made from choice apples. The beer and ale are brewed from the best grains. If there is poison in the food or drink I serve to my guests, someone must put it in.

"Only tell me the name of the wicked man who does this mischief and my soldiers shall arrest him and shut him closely in prison where he can do no more harm." The Queen looked very stern as she said this. Half her band rose in their saddles to start after the rascal, but the Fairy stopped them with a wave of her gold wand.

"No one puts the poison into any of your food and drink, O Queen," said the Fairy. "The poison is in the ale, beer, wine, and cider. It forms in them while they are fermenting in the vats. And this poison, O Queen, is a more dangerous one than you think, for beside making your guests ill, it has the power to make them like it so well that they will want to drink more and more of it. By and by many will go home and make these drinks for themselves as some have done already. Then sickness and sorrow will spread all over the land."

Having said this, the Fairy disappeared.

Then the Queen and all her horsemen rode off home. As soon as she reached the palace she commanded the servants to pour all the ale, beer, wine, and cider into the sea. And she printed messages to the people telling them all that it was these drinks which had hindered them in their sports and had made them sick. "Now," she said, "I shall make no more of them, and you must not." When they realized the truth, they stopped making and drinking these poisonous drinks, and there was no more of this dreadful sickness at the festivals or at home.

And the guests were merrier and the festivals more splendid than ever before, for everyone could laugh and talk and enjoy the music and other pleasures provided as long as the feast lasted. Never had there been such fine games seen.

The Queen lived many years to bless her people, and every year she sent a bunch of grapes, a fine red apple, and a handful of grain to the Fairy. This was to show her thankfulness and that she no longer made the fruit and grains into poisonous drinks, but ate them as they came from the hand of nature.

LESSON PRESENTATION

Tell the story, "What the Fairy Told the Queen," or use it as supplementary reading. Let the children reproduce it in their own words. Keep up interest by directing one child after another to take up the thread of the story and carry it forward. By questioning, lead the children to see that in the main the story has been and is true. Do rulers give feasts now? Has it often been the case that at feasts or entertainments the strange sickness has appeared? Show that poorer people have followed the example of the rich on a smaller scale. The sickness has many times hindered people from doing their best in races, at work, or in studies. What did the queen do after some time? Show that just so people began to ask what really caused the sickness. They thought it could not be the wine or cider because they were made from good fruits; or the beer, because it was made from good grains. Many wise men studied the matter. Finally they all came to see that the wine, beer, and cider intoxicated (or poisoned, for that is what the word means) those who drank them, but it was believed that these drinks were not harmful unless one drank too much. Now the wise men have learned that all these drinks are harmful and dangerous because they contain the poison, alcohol. Explain simply how the tiny yeast plants produce fermentation; how the fermentation changes the sugar in the good fruit or grains into alcohol; how drinks containing even a little alcohol injure the brain and nerves and nearly all parts of the body, although the injury may not appear for some time; and how, worst of all, they have the power to form a craving for themselves which may become uncontrollable. Always emphasize the last points when discussing the milder alcoholic liquors, for otherwise the children will find it hard to understand why these liquors which are often freely drunk, and which so far as they can observe (barring the less common cases of marked wine or cider alcoholism) are harmless, are in fact dangerous. See that they get the idea firmly fixed in their minds that the injurious nature and the appetite-forming power are certainly there, although they can not always be perceived.

IN THE LAND OF THE VINE

ITALY is frequently quoted as an example of a wine-using country which is free from alcoholism. Statistics and other conditions, however, show that this is not true, according to Giovanni Rochat in *L'Alcoholismo in Italia* (1903), who says that alcoholism not only exists, but is increasing.

From a careful study of statistics gathered from various sources, the author made the following summary: 30 per cent. of the homicides and 60 per cent. of the cases of stabbing or of furious outbreak are committed while the perpetrators are under the influence of wine or of liquor; in 46 per cent. of delinquents, the father or mother or both, were alcoholists. With alcoholism comes aversion to work and the tendency to idleness, impulse takes the place of reason—a characteristic of the delinquent.

The temperamental side of the alcohol question among Italians is of importance in America. Of this, in Italy, the author says:

"The Italian, usually sober, generous, sociable, a 'good son,' with praiseworthy industry, seems quite otherwise than ferocious or bloodthirsty; but with his hopeful, impressionable, excitable temperament, prone to exaltation, passionate, nervous, he becomes an easy prey to alcohol. Questions of honor are not settled by talk when the Italian has been

drinking; he settles them with the knife. Intoxication seldom reaches the state of repugnant drunkenness, but it puts him in a state of mental excitement, in which he is little able to think about his speech, or his conduct. Under the influence of alcohol, so easily excited, so warm, so inflammable, he quickly puts an

end to all speech and cuts into the discussion with his knife; he wounds and kills.

"When the fumes of the wine have passed, he forgets all about his misdeeds, his disgraceful ferocity, he no longer explains with his knife, but meets his friends amicably and opposes them only with a laugh."

THE EFFECT OF A BOTTLE OF WINE A DAY

BY HENRY SMITH WILLIAMS, M. D., LL. D.

WHEN a single dose of alcohol is administered its effects gradually disappear, as a matter of course. But they are far more persistent than might be supposed. Rudin found the effects of a single dose of alcohol to persist as regards some forms of mental disturbance, for twelve hours, for other forms twenty-four hours, and for yet others thirty-six hours and more.

Noting thus that the effects of a single dose of alcohol may persist for two or three days, one is led to inquire what the result will be if the dose is repeated day after day. Will there then be a cumulative effect, or will the system become tolerant of the drug and hence unresponsive? The results of the experiments show a piling up of the disturbing effects of the alcohol. Kurtz and Kraepelin estimate that after giving eighty grams per day to an individual for twelve successive days, the working capacity of that individual's mind was lessened by from twenty-five to forty per cent. Smith found an impairment of the power to add, after twelve days, amounting to forty per cent.; the power to memorize was reduced by about seventy per cent.

Forty to eighty grams of alcohol, the amounts used in producing these astonishing results, is no more than the quantity contained in one to two litres of beer or in a half-bottle to a bottle of ordinary wine. The so-called moderate drinker, who consumes his bottle of wine as a matter of course each day with his dinner—and who doubtless would declare that he is never under the influence of liquor—is in reality never actually sober from one week's end to another. Neither in bodily nor mental activity is he ever up to what should be his normal level.

That this fair inference from laboratory experiments may be demonstrated in a thoroughly practical field, has been shown by Prof. Aschaffenberg himself, through a series of tests made on four professional type-setters. The tests were made with all the rigor of the psychological laboratory (the experimenter is a former pupil of Kraepelin), but they were conducted in a printing office, where the subjects worked at their ordinary desks, and in

precisely the ordinary way, except that the copy from which the type was set, was always printed, to secure perfect uniformity. The

A LOSS OF TEN PER CENT. IN WORKING EFFICIENCY

The experiment extended over four days. The first and third days were observed as normal days, no alcohol being given. On the second and fourth days each worker received thirty-five grams (a little more than an ounce), of alcohol, in the form of Greek wine. A comparison of the results of work on normal and alcoholic days showed, in the case of one of the workers, no difference. But the remaining three showed greater or less retardation of work, amounting in the most pronounced case to almost fourteen per cent. As type-setting is paid for by measure, such a worker would actually earn ten per cent. less on days when he consumed even this small amount of alcohol.

In the light of such observations, a glass of beer or even the cheapest bottle of wine is seen to be an expensive luxury. To forfeit ten per cent. of one's working efficiency is no trifling matter in these days of strenuous competition. Perhaps it should be noted that the subjects of the experiment were all men habituated to the use of liquor, one of them being accustomed to take four glasses of beer each week day, and eight or ten on Sundays. The heaviest drinker was the one whose work was most influenced in the experiment just related. The one whose work was the least influenced was the only one of the four who did not habitually drink beer every day; and he drank regularly on Sundays. It goes without saying that all abstained from beer drinking during the experiment. We may note further, that all the men admitted that they habitually found it more difficult to work on Mondays after the over-indulgence of Sunday than on other days, and that they made more mistakes on that day. Aside from that, however, the men were by no means disposed to admit, before the experiment, that their habitual use of beer interfered with their work. That it really did so could not well be doubted after the experiment.—*McClure's Magazine*.

Wine and Cider—Lesson for Advanced Grades

SINCE the comparatively recently-discovered drug, cocaine, has come into more common use and many have become cocaine "fiends," laws have been passed in several states forbidding the sale of this drug and of catarrh snuffs and other preparations containing it. Many physicians commenting on these wise laws, say that if the drug, alcohol, were now being introduced for the first time into general use and its fearful ravages could be observed without prejudice, it would receive as short shrift as cocaine.

This offers a helpful suggestion as to a method of presenting lessons on the nature and effects of alcohol.

Suggest to the class that they try to imagine that they have just heard for the first time about alcoholic drinks, and that they examine the facts on their merits.

The wine-producers of America are making very great efforts to "educate" the people to the free use of wine with meals—and elsewhere. They represent, among other things, that their products are food and drink, are healthful and harmless, and will not cause drunkenness but rather reduce it.

Suppose with your class:

1. That a large wine and cider-making corporation wishes to locate in your section.
2. That it promises to encourage certain forms of agriculture as vine-growing and apple raising, and to employ a large number of men.
3. That wines and other alcoholic drinks have not before been used there, and, therefore,
4. That the people of the place know nothing personally of these drinks but have heard that the results have been harmful in impaired health, longevity, physical and mental working ability, and in causing crime, pauperism, insanity, degeneracy, and misery; that the manufacturers not only make the beverages, but use all modern business methods to persuade people to drink them; that the alcohol trade interests have begun to exert a dangerous political power; and, that measures are being taken elsewhere to abolish the use, manufacture and sale of these drinks.

The class may be considered a city Board of Trade. It is supposed that some member has introduced resolutions to the effect that the influence of the Board be thrown in favor of the admission of this new corporation. Point out the fact that, in consideration of the serious charges made against the drinks which the new corporation is seeking to introduce, ordinary business prudence as well as the

good of the community require that a rigid investigation be made before acting upon the resolution. It is an excellent opportunity to link the question of the social good with business considerations.

Point out, further, that in America we are striving to produce the highest type of human beings the world has ever seen. Every town, city and state is striving more or less earnestly, to secure to its people the conditions which make for mental and physical efficiency; the abolition of preventable diseases; the care of the feeble, whether from extreme youth or age; the care suitable to defectives and feeble-minded already present, and the elimination of all possible factors responsible for the production of others; the "square deal" in business and politics for every man, woman and child; the highest ideals of character, including sobriety, purity and altruism. What will be the effect of this business on such conditions?

The question for discussion is:

Shall we recommend that this business be permitted to establish itself in ———?

Require each member of the "Board" to investigate one or more phases (topics) of the subject and take from three to ten minutes in presenting the results of his work at the next meeting, which may be the following session of the class or constitute a part of the Friday afternoon exercises when ample time is available. A week is not too long for the investigations. The sub-topics are inserted mainly for the use of the busy teacher, but may be given with the topics if the class need these specific directions for research.

A wide range of extra reference matter on these topics will be found in this and the September-October *Journal*, and in preceding volumes. See also McClure's Magazine (October), Alcohol and the Human Body and the list of authorities on page (48 a).

Do not prejudice the case, but be prepared to show the fallacy of arguments like those of Prof. Munsterberg, and bear in mind that many of the daily papers advertise alcoholic liquors extensively and that many of the utterances of such papers are undoubtedly partial to those advertisers. Help the class to weigh all the evidence and to distinguish between assertion and well-proved facts. This lesson should stimulate thought and encourage impartial research.

When all the evidence is in, the results of the investigation should be clearly stated and tabulated and the statements entered in notebooks. If desired, the "Board" may vote on the resolution, following parliamentary procedure. This lesson can easily be adapted to serve as a lesson on beer.

TOPICS FOR RESEARCH

1. Kinds of wine:
 - a. Grape, apple (cider), gooseberry, elderberry, etc.
2. Process of manufacture of wine and cider:
 - a. Expression of the juice.
 - b. Fermentation (change of sugar to alcohol and carbonic acid gas.)
3. Average alcoholic contents of wines and cider (figures from *Report of Committee of Fifty*):
 - a. French, claret 10.3 per cent.; German, Rhine, Moselle, etc., 8.7 per cent.;

Champagne, 10 per cent.

- b. "Fortified" (with brandy) wines, Marsala, 16 per cent.; Sherry, 17.5 per cent.; Port, 17 per cent.; Madeira, 15.4 per cent.
- c. Ciders, American, "sweet," 1.4 per cent. (gains about one per cent. a month until it contains from 10 to 12, or in rare cases, 14 per cent.)

NOTE—The Committee of Fifty (p. 334), found that six samples of cider being sold as "sweet," contained from 3.6 to 8 per cent., average 5.7 per cent., by weight, of alcohol.

4. Effects of wines on health and longevity:
 - a. On digestion.
 - b. On brain and nerves.
 - c. On heart and blood vessels.
 - e. Cumulative effects.
 - f. On general length of life.
5. The relation of the use of alcoholic drinks to infectious diseases such as tuberculosis (see Laitenen experiments, etc.)
6. Effects of wine and cider upon character:
 - a. On higher moral faculties.
 - b. On temper.
7. Effects of use of wines by children:
 - a. Upon growth. b. Upon school work.
8. Effects of parental alcoholism upon the race:
 - a. Enfeebled physique.
 - b. Impaired nerve vitality, hence epilepsy, idiocy, hysteria.
 - c. Mental deficiency, dullards, etc.
 - d. Hereditary craving for drink (dipso-mania).
9. Effects of wines on the aged:
 - a. Effects on blood vessels (similar and additional to senile decay).
10. Relation of the use of alcoholic drinks to
 - a. Crime. b. Pauperism.
11. Relation between the use of wine and drunkenness or, more properly, alcoholism:

(See the reports of results of wine-drinking in Italy, Germany, Switzerland, France, etc.)

NOTE—Bring out the point that alcoholism, that is, the constant use of alcoholic liquors, which usually stops short of entire intoxication, is in some ways more dangerous to life and health and to the children than is drunkenness, which is comparatively infrequent.
12. Effects of the use of wines on working ability:
 - a. On intellectual and creative work.
 - b. On manual work e. g. typesetting.
13. Relation between the use of alcoholic drinks and thrift and savings-banks deposits.
14. Comparison of the value to a community of a wine business with that of useful industries such as boot and shoe making, publishing, etc.

WHICH PAYS BETTER, THE WINERY OR THE MANUFACTORY?

BY F. T. MCWHIRTER, PH. D.

THE wage-earner is primarily interested
(1) in a fair price for his labor, and
(2) in regular employment.

The worth of an industry to the wage-earner is in direct ratio to the number of days of employment that it gives for a given amount of output, and also to the amount of wages paid upon that output. For example, take twenty-five industries, such as the manufacture of clothing, carpets, food products, etc., the commodities of which enter into the daily consumption of average people, and taking these industries upon a basis of one hundred dollars output, we shall find that for each one hundred dollars spent by the consumer, the boot and shoe industry as stated above gives employment 14.21 days.

The general average of the above will be found to be 12.07 days for every one hundred dollars of output, and an average of \$17.78 is paid to the wage worker and \$44.05 to other useful industries and for raw material. Upon investigation of malt and distilled liquors, we find that \$100 spent for these articles gives employment only 1.47 days and pays to the wage-worker \$3.80 and to other industries \$9.63. The showing is very unfavorable for malt and distilled liquors. It will be readily seen that the useful industries average eight times as many days of employment to the wage-worker as does the liquor industry, also pays five times more wages, and uses three times the amount of manufactured material.

Put in another way: Let two men on Saturday night leave their shops each with \$10. One of them spends this money in stores selling the useful commodities, and we shall find that on the average \$1.80 goes to the wage-worker, and for raw material and products entering into the goods which he bought, \$4.40. The other man takes a few of his friends and spends his \$10 in a saloon. Of his money 38 cents has gone to the wage-worker and 96 cents for raw material. The balance of it has gone to support a class of citizens who are far from being "the best people on earth."

"Why, Willie," said mamma, "you're pulling our cat's tail."

"Mamma, I ain't pulling her tail; I'm only holding it and she's doing the pulling."—*"The Little Chronicle."*

PUBLICATIONS ON THE ALCOHOL QUESTION

FOR the convenience of our readers who wish to acquaint themselves with some of the foreign literature on the alcohol question, the JOURNAL will publish from time to time classified lists of such publications. The following are selected this month as they relate to several of the topics discussed in this number. These are not translations, but the original French and German pamphlets or leaflets. The language of which each, and the date of publication are indicated with the title. The JOURNAL will forward to the foreign publishers orders received with cash at the prices given for any of the literature desired, provided the orders reach us before Nov. 10, 1908.

WINE AND BEER

	Price
Alcoholic Fermentation; the origin of wine and beer. Werner Degenkolb. German. '08.	\$0.13
The Dangers in the Use of Beer. Hugo Hoppe. German.	\$0.08

PHYSIOLOGICAL EFFECTS OF THE USE OF ALCOHOLIC LIQUORS

"Hygiene des Ich." Prof. Max Gruber. German. '06.	\$0.18
Alcohol and Nutrition. Dr. Stehr. German. '07.	\$0.08
Popular Prejudices concerning Alcohol. Dr. Bienfait. French. '07.	\$0.12
Alcohol before Science. Dr. Vaucleroy. French. '01.	\$0.10
Alcohol and Its Dangers. Heinrich Quensel. German. '08.	\$0.10
Alcohol and Mental Disorders. Dr. August Forel. German.	\$0.08
The Influence of Alcohol on the Nervous System. Dr. Ziehen. German.	\$0.10
The Influence of Alcoholic Drinks upon Children. Dr. A. Frick. German. '04.	\$0.08

Give No Alcohol to Children. Prof. Max Kassowitz. German. '06.	\$0.06
--	--------

ALCOHOL AS A CAUSE OF DEGENERACY

Who is to Blame for the Condition of the Children? Dr. Franz Schöenberger. German. '08.	\$0.06
Alcohol and the Future of the Race. H. van der Smissen. German. '07.	\$0.09
The Increasing Inability of Women to Nurse their Children. Prof. G. von Bunge. German. '07.	\$0.25
Unconscious Villainy. Prof. E. Bleuler. German. '06.	\$0.18
Alcohol and Race Hygiene. Dr. Fock. German.	\$0.08
Where Does the Consideration of the Alcohol Question Lead Us? Dr. K. Mayer. German. '01.	\$0.08

THE PHYSICIAN'S RELATION TO THE ALCOHOL QUESTION

The Alcohol Question from the Physician's Standpoint. Dr. W. Pfaff. German. '06.	\$0.35
The Alcohol Question and its Importance for the Physician. Dr. J. E. Colla. German.	\$0.08
The Use of Alcohol from the Standpoint of Physiology. Justus Gaule. German.	\$0.07

THE TEACHER'S RELATION TO THE ALCOHOL QUESTION

The School and the Struggle against Alcoholism. German. Prof. Herod.	\$0.10
The Prevention of Alcoholism through the School. Rev. A. Sladeczek. German. '05.	\$0.65
The Work of the School in the War against Alcoholism. Wilhelm Weiss. German. '07.	\$0.08
Character Formation and Alcoholism. Rev. H. Marthaler. German.	\$0.08
Anti-Alcohol Catechism. M. Sauber. French. '00.	\$0.09

NEW SCIENTIFIC TEMPERANCE LEAFLETS

	PRICE PER 100
Social Service in the Temperance Reformation	\$2.00
Important Place of Physiology in the School Curriculum	1.00
The Problem of Americanizing One Million Immigrants Yearly	.75
Scientific Temperance in the First Six School Grades	.30
International Course of Study	2.00
Alcohol as it Affects the Brain and Nerve Tissue	.75
Relation of the Drink Problem to the Perpetuity of the Nation	1.00
The Young Men and Tobacco	2.00
Why the Cigaret is Specially Harmful	1.00
The Boy and the Cigaret	3.25

Travelling Loan Exhibit

— OF —

Attractive, Anti-Alcohol

CHARTS

ENTIRELY NEW

For Pupils, Teachers, Professional
People, the General Public

EXHIBIT consists of 25 Colored Charts (framed, size 22 x 28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other infectious Diseases, etc. (See *JOURNAL* p. 43). No objectionable details. Excellent for No-License Campaigns.

Send for Full Information as to Expense
and Plan for Use.

Scientific Temperance Federation

23 Trull St., - Boston, Massachusetts

The Scientific Temperance Federation
American Branch of the International Temperance Bureau
Purpose, Methods, Advantages, Membership

Its Educational Work for the Children

Purpose—To prevent intemperance by the promotion of wise, thorough instruction in the schools of the nation as to the laws of health and the dangers in indulging in the use of alcoholic drinks and other narcotics.

Methods—(1) To co-operate with existing organizations in securing this end. (2) To deepen public appreciation of the need of the instruction so that it will be popularly as well as legally required. (3) To bring to its support forces hitherto uninterested in it. (4) To make known the ascertained truth concerning alcoholic drinks and other narcotics so that the facts taught in the schools shall square with it.

Its Membership

Advantage—All members receive free *The School Physiology Journal*, notices of useful new publications, samples of leaflets or other information published by the FEDERATION.

Associate Membership is open to all who desire (1) to have fuller acquaintance with the alcohol and narcotic question which membership in the FEDERATION affords, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance. Anyone may become an Associate Member by the payment of the annual fee of \$2.00.

THE SCIENTIFIC TEMPERANCE FEDERATION has a unique place to fill; a distinct message and work. Its aims are fundamental and practical.

Address all contributions, correspondence, inquiries, etc., to THE SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull Street, Boston, Mass.

Combination Journal--Magazine Offers

Almost any Periodical published, furnished with Journal at Reduced Rates.

Let us know what Magazines you want and will make the

PRICE RIGHT

World's Work,	\$3.00	} OUR PRICE \$3.00
Delineator,	1.00	
Altruist or Mother's Magazine . . . . .	.50
Physiology Journal . . . . .	.60

Review of Reviews	\$2.00	} OUR PRICE \$2.60
Success, or any	1.00	
Class A Magazine . . . . .	.60
Physiology Journal . . . . .	.60

Suburban Life	\$3.00	} OUR PRICE \$3.00
Women's Home Companion	1.00	
or any Class A Magazine		
Physiology Journal, . . . . .	.60

Delineator	\$1.00	} OUR PRICE \$2.00
Everybody's	1.60	
Physiology Journal . . . . .	.60

TEACHER'S GROUPS.

Normal Instructor,	\$.75	} OUR PRICE \$1.00
School Physiology Journal,60	

Normal Instructor,	\$.75	} OUR PRICE \$1.65
Primary Plans,	1.00	
School Physiology Journal, . . . . .	.60

CLASS A.

Success,	\$1.00	} Any 1 with JOURNAL \$1.15
Woman's Home Companion,	1.00	
American (Leslie's),	1.00	} Any 2 with JOURNAL \$1.80
Our Little Folks, (new)	1.00	
American Motherhood,	1.00	} Any 3 with JOURNAL \$2.50
Primary Plans,	1.00	
American Boy,	1.00	
Altruist, *	1.00	
The Pathfinder,	1.00	

*Less 15c if this is chosen.

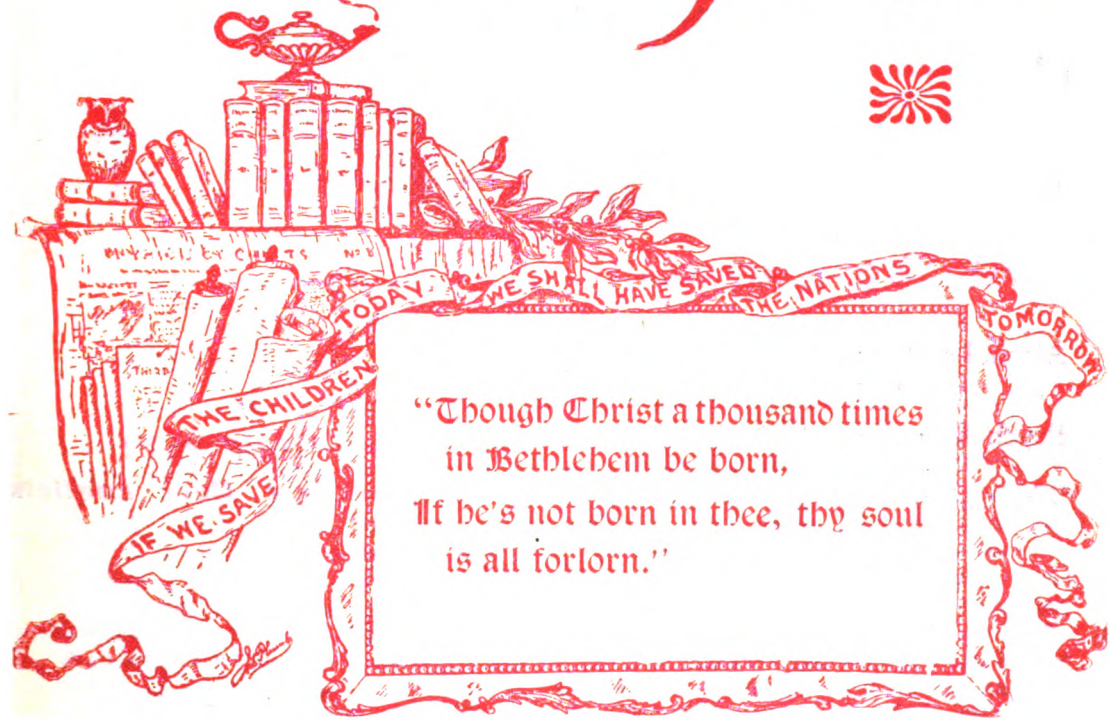
SCHOOL PHYSIOLOGY JOURNAL, 23 Trull Street, Boston, Mass.

Please mention the JOURNAL when writing to advertisers.

592

NOV 25 1908
B. P. L.

THE SCHOOL PHYSIOLOGY JOURNAL



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, FOUNDER.

VOL. XVIII. NO. 3
DECEMBER, 1908.



HYDE'S PRIMER

25 cents

The idea of this book is to teach children to read by the use of familiar rhymes. For this purpose there have been selected a few of those most generally known, each of which is followed by a series of interesting and ingeniously varied lessons furnishing drill by the frequent repetition of the same words and phrases. The small vocabulary is developed slowly and progressively. Pictures furnish material for observation and language work. This primer is easy and workable, and intensely interesting to every child.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

Blaisdell's Physiologies

Dr. Blaisdell's physiologies have been tested for many years in thousands of schools throughout the land with the result that they have long since gained the complete confidence of the school world. The recent revisions of these books have made possible many improvements in text, in arrangement, in illustrations, in binding; in short these standard texts are more adequate than ever before and are fully adapted to the requirements of modern ideals and methods of teaching the subject.

Child's Book of Health. Revised Edition.

This revision of one of the simplest books on the subject shows in an interesting and practical way the relation between the great laws of science and the details of our daily life.

How to Keep Well. Revised Edition.

The simple facts which concern our bodily life are clearly and tersely presented in this revision of a standard text-book.

Our Bodies and How We Live. Revised Edition.

The author's intent has been to bring his well-known book fully into touch with the latest and best scientific thought on physiology and hygiene.

Life and Health.

"Life and Health" has been prepared for those secondary schools which can devote but one or two terms to this branch of study.

Practical Physiology.

Teachers of higher schools will find this volume the most satisfactory of physiologies. It is designed to combine a standard text with a practical and carefully prepared course in laboratory work.

GINN & COMPANY, Publishers

Boston New York Chicago London
San Francisco Atlanta Dallas Columbus

Three Great Popular Books

— ON THE —

Alcohol Question

PRICE
POSTPAID

Alcohol and the Human Body, \$1.65

By Sir Victor Horsley and Mary Sturge, M. D.
New Edition ready about Jan. 1, 1920.

Psychology of Alcoholism, - \$1.65

By Geo. B. Cullen, B. D., M. A., Ph. D.

The Saloon Problem, - \$1.10

By Prof. J. N. Barker, Best All-round Book on
Economics and General Aspects.

Combination Offers

Alcohol and the Human Body, \$1.65
or
Psychology of Alcoholism, 1.65
and
Physiology Journal, one year, .60 } ONLY \$1.80

The Saloon Problem, \$1.10 } ONLY
Physiology Journal, one year, .60 } \$1.40

Three Books and Journal, one year, } ONLY \$3.85

Write for prices on any other desired combination.

Tried to Have One.—TEACHER: "Now then Tommy, you have no good excuse for staying away from school yesterday."
TOMMY: "Well, it ain't my fault."
TEACHER: "It isn't? Why?"
TOMMY: "'Cause I done my best to think up a good one."

—Philadelphia Press.

CONTENTS.

	PAGE
Moderate Drinking	49
Motherhood and Alcohol	51
Economic Value of Abstinence	53
Cost of a Boy	54
Protection of the School Child	55
Editorials	57
Brewers or Children—Which?	57
What We Owe to Laboratory Investigation	58
Grammar Lesson Body Heat	60
Publications on the Alcohol Question	64

THE BEST YET!

New Wine and Beer Leaflets

False Claims for Wine
Wine a Peril to Childhood
Wine Does not Drive out Drunkenness
Alcoholism in Wine-growing Countries
Commercial Fictions vs. Disinterested Facts about Beer.
Alcoholism and Tuberculosis

Prices very low — Send \$.05 for samples

**THE SUFFOLK
ENGRAVING AND ELECTROTYPING CO**

Illustrators, Engravers, Electrotypers,
234 CONGRESS ST. and 275 WASHINGTON ST.
BOSTON, MASS.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVIII

BOSTON, DECEMBER, 1908

No. 3



To change and change
is life, to move and
never rest ;—
Not what we are, but
what we hope, is
best.



Be as thou wouldst be
in thine own clear
sight.
And so thou shalt be
in the world's ere
long.



MODERATE DRINKING

BY PRESIDENT CHARLES W. ELIOT, LL. D., HARVARD UNIVERSITY, CAMBRIDGE, MASS.

From an address delivered before Mass. No-License Conference, Boston, October 29, 1908.

I HAVE been all my life what is sometimes called a moderate drinker, that is to say, I have used beer and wine on occasion, not habitually, and I have never experienced any ill-effects in my own person from either.

I have recognized the fact that alcoholic drinks have a tendency to cheer people up and make them jolly and noisy ; but the question of the expediency of that kind of elevation has gained on me as the years have gone on. It seems to me that the recent researches in physiology and medicine tend very strongly to show that the moderate drinking of alcohol is inexpedient.

As a result of experience it is a fact that men who are to be exposed to cold or heat or hardship of any sort are not prepared or braced for such encounters by any form of alcohol.

You know that it was considered essential that a sailor in the merchant marine or in the navy, should be braced for his arduous work by grog every day ; that was really and simply considered a necessity. Now, grog has

been abolished in our navy absolutely and is no longer served in well-conducted ships of the merchant marine, and the result is a demonstration that rough, hard life was not really helped by alcohol, but hindered. No captain of an ocean liner ever supports himself now against the terrible exposures of the bridge by means of alcohol. He will take hot tea or coffee or hot lemonade, as I have seen many of them do, but he never takes alcohol to stimulate himself when exposed to terrible weather.

It is so in regard to most intellectual labors. It was not expected that anybody encountering the labors of the Prime Minister of England, in his office every night and during the long hours of the day, could do the work without being supported by one or two bottles of port a day ; and many famous men have lived through that sort of life under those conditions. That view is now abandoned. It is well known that alcohol, even if moderately used, does not quicken the action of the mind or enable one to support mental labors. Digitized by Google

THE TIME REACTION

We have had a great deal of German investigation and some American investigation in psychological laboratories in that direction and the results are perfectly plain, and they are all one. For instance, a clerk has as his principal function the addition of figures, in long columns or short. If the clerk drinks in the day a moderate amount of wine or beer, it is demonstrated that he cannot add as well the next day as if he had had no alcohol the day before. That has been proved by actual experiment in a very large number of cases, so large as to establish the fact. It is established as a psychological fact, the result of experiment.

There is what is called the time reaction; that is, the interval that elapses for example, between your hearing a pistol shot or seeing a flash of light and putting your muscles in motion to touch a given spot on the table.

That is time reaction. Now it is demonstrated that alcohol, even in the most moderate quantity, affects unfavorably that time reaction; that is, slows the whole nervous action of the man who takes it, and that this effect is injurious.

I had occasion to know about the time reaction of a famous pugilist whose habitual residence was not far from this spot. He was expecting to fight in a city at some distance from Boston. The appointment was made, but he had been on a succession of sprees; his trainer could not control him; he was under the influence of alcohol a greater part of the time. He was brought to Cambridge and his time reaction was tested. It was very slow. Now, this man had always been famous for the quickness of his time reaction. A pugilist has need to have a very short time reaction. He must see by the motion of his opponent's fist just where he is going to strike, and put his own arm in the way quickly. A slow reaction is fatal to a pugilist or fencer or runner.

LOWERS INTELLECTUAL POWER

The effect of alcohol on the time reaction of the human being has been studied carefully, tested in thousands of cases, and there is no question about the ill effects of alcohol even in very moderate doses on the time reaction. That means that alcohol diminishes the efficiency of the workingman in most instances, makes him incapable of doing his best in the work of the day. So I say that the recent progress of scientific experimentation has satisfied me that even the moderate use of alcohol is objectionable; that the habitual use of alcohol in any form is lowering to the intellectual and nervous power. Now, if a man be leading an intellectual life, if he is en-

gaged in an action which interests him keenly, stirs him, impels him to the use of his mind, then he will inevitably feel the slowing effect, the deteriorating effect of this drug.

I was brought up as a youth and as a young man, as a student and teacher of chemistry, to respect exact science. I was taught to believe in nothing so much as the open mind, and I felt that exact observation and just inference were the foundation of that kind of knowledge which should determine the conduct. And so I have tried all my life to keep an open mind, particularly on burning questions, and I suppose that is the reason why, as I have grown older and have seen more, I have changed my view about license and no-license. I feel that much has been proved showing that it is physically and mentally and morally for the advantage of a population as a whole to go without alcoholics as a rule.

PERSONAL LIBERTY

But then, I was brought up in my youth, in church and school and college, to believe in human liberty as the only condition for developing human virtue or anything in the human being that deserves the name of virtue, a self-sustaining, self-controlling principle. Isn't it a great interference with liberty, with the liberty that God gives man, to undertake to prevent people who want alcoholic drink from getting it? I have somewhat changed my mind about that since Cambridge first tried to establish the practice of no-license.

What is the justification of interference with that liberty? There are a good many questions concerning which we must ask that question—the justification for interference with liberty. I found that justification in the experience of Cambridge under a no-license system. It seemed to me that the collective good, by excluding saloons from Cambridge, justified the abridgment of the individual liberty, particularly when that liberty was a liberty to use for pleasure something that was unwholesome.

I have found in that fact the justification for interference with personal liberty to that extent—the exclusion of the saloon. I was asked just now at this table whether I would go further and say that I would advocate a complete exclusion from Cambridge of liquor in all forms. I have not got that far yet—perhaps I shall.

COMMUNITY VS. INDIVIDUAL

But I just said that we have been obliged to consider interference with individual rights in many directions of late. The reason is that this massing of population in small

areas, crowding, driving together in an unwholesome manner, has brought a large number of new problems into society. Nature herself is showing us that in many ways we cannot pit ourselves against natural evils on the individualism principle. For example, we in eastern Massachusetts have been much

vexed with the brown-tailed moth. Now, you cannot destroy the brown-tail moth or prevent his ravages if every man and woman who owns a lot of land shall be at liberty to let the brown-tail moth alone. That is impossible. Nature is teaching us that collectivism must sometimes over-ride individualism.



CHARLES W. ELLIOTT, LL. D., PRESIDENT HARVARD UNIVERSITY



MOTHERHOOD AND THE ALCOHOL QUESTION

BY VIOLET KELYNACK, M. B., CH. B., LONDON

THE aspect of the problem of alcoholism which is concerned with motherhood and childhood is of first consideration. In these two states are bound up the present and future welfare of our nation; for most of the problems of the present are in some form related to the woman as mother, and our hopes for the future rest upon the nation's little ones.

During the last century, we have been altering our views regarding the place of the child in our economic and social system. It used to be considered that children existed

for the use and benefit of the parents, and that those parents had the right of absolute control over them. But I think it may safely be said that we have reached that stage when we realize that parents exist for the sake of their children. It is with the rights of the children, and not with those of the parents, that patriots are now primarily concerned.

Evidence as to the wastage of child life abounds. The statistical returns of infantile mortality, the enormous number of hospitals, orphanages, asylums, and other havens for cripple and derelict children, all bear their

testimony. But it should be borne in mind that death returns give no adequate idea of the crippled condition of those who struggle through a neglected infancy. The results of physical examination in schools reveal an enormous amount of deformity of body and defectiveness of mind. This not only deprives the nation of untold wealth, but adds a burden which is rapidly becoming intolerable.

We may well ask, what is the cause of this lamentable state of affairs? There are many agencies at work, combining in intricate complexity, but chief and foremost, as most agree, stands out the malign influence of our national drinking habits.

DRINK AND THE INFANT

The human infant is absolutely the most helpless of all newly-born creatures. The first year of life is one of complete dependence, and an enormous number of babies fall victims during that period to the effects of neglect and ignorance on the part of their natural guardians.

Although the general death-rate has decreased, the infant mortality has remained practically stationary. During the first week of life, when the infant is struggling to adapt itself to its new circumstances and environment, the mortality is so high that it is estimated that were it to continue at the same figure for forty-two weeks, every child born alive would have succumbed during that period.

Bad housing, poverty, and the cruel struggle for mere existence among the poorer classes all help to keep up this annual sacrifice of human life, but we shall not be far wrong if we say that parental and especially maternal, alcoholism, with its associated evils, is greatly, if not chiefly responsible. It is impossible for the half-starved, drink-sodden woman to do justice to herself or her infant either before or after its birth.

The condition of the working classes, especially in the towns—and 70 per cent. are urban dwellers—is at its best fraught with difficulty for the upbringing of healthy children. Even a steady worker, when aided by a sober, industrious wife, feels the keen stress of life, and finds it well-nigh impossible to provide for sickness or premature death. But when the all too scanty wage is expended in drink by the husband, it inevitably means loss for the children and deprivation for the mother. The indulgence in alcohol is not only of no benefit to the man, but often causes serious impairment of his wage-earn-

ing powers. If this amount spent on drink were spent in providing suitable food or more commodious dwellings, the condition of the children might not be so lamentable.

PRE-NATAL ALCOHOLISM

Although the child may not enter the world with an actual alcoholic craving, it is often born with badly nourished tissues, with unstable brain and nervous system, and limited in its powers for normal development. It is, therefore, much more liable than an ordinary healthy person to fall under the influence of drink, and is less able to resist the assaults of disease and the privations of poverty.

ALCOHOL AND HOME HYGIENE

It is practically impossible—at least among the poor—for the alcoholic home to be hygienically healthy. There is an insufficiency of food, that which is being provided being usually poor in quality and almost invariably badly cooked. The sense of pride in the home is lost, and neglect, carelessness, and apathy lead to a breach of all the laws of personal and domestic hygiene. By the narcotizing influence of alcohol on the nervous tissues of the mother she becomes neglectful of herself, forgetful of her children, contented with her unnatural environment, and unresponsive to all incentives for the betterment of herself or her family. And lest it be said that I am only telling part of the truth, let me add that the like applies in great measure to the husband and father.

What can be the fate of children whose lot is cast in such a home? Ushered into life with powers perhaps already handicapped, accustomed to the smell and taste of alcohol from earliest infancy, starved and neglected in body, and it may be stunted and warped in mind, living among unsanitary and unwholesome surroundings, with the street for a playground and the publichouse as the chief and daily resort, habituated to a drink-desolated home, and knowing no other guardianship than that of a drunken parentage, it is little wonder that the impressions of school life are quickly effaced, and that sooner or later they recapitulate the miserable life-history of their forbears.

The more we probe into the conditions inimical to child life, the more do we see that parental alcoholism is a potent factor—often, it is true, an indirect and not easily recognized one, but, nevertheless, most powerful and pervasive in its consequences.—*British Journal of Inebriety*.

THE ECONOMIC VALUE OF ABSTINENCE

BY MARIE C. BREHM, CHICAGO, ILL.

Lecturer for the Permanent Committee on Temperance of the General Assembly of the Presbyterian church.

WHATEVER is physiologically wrong can not be morally right. Whatever is morally wrong can not be politically right. Whatever is physiologically, morally and politically wrong can not be economically right. If there are no physiological reasons against the use of alcohol, there can be no moral reasons advanced for abstinence from the use of alcoholic liquors. If there are no moral reasons against the indulgence in their use, what possible basis is there for legislatures and political parties to declare against their manufacture and their sale?

In its final analysis the entire Temperance Reform, in all its phases, be they moral, social, economic, legislative or political, swings upon this tiny interrogation point. What is Alcohol? Is it food? Is it medicine? Is it poison?

As long as people believe the advertisements of the brewers, so long will breweries continue to flourish; as long as people ignorantly tie their faith to alcohol in medicine, so long will it be impossible to put out the fires in the distilleries.

To have a just estimate of the economic value of total abstinence, we must first consider the economic value of a human life. According to the estimate of expenses devoted to the saving of a life in that modern invention, the baby incubator, the value is from five hundred dollars upwards to five thousand. A seven-year-old boy, when asked the value of his eyes, ears, hands, feet, etc., estimated his value at upwards of twenty million dollars. The value of a well-devel-

oped man, capable of taking his part in the world's work, only considered economically, is above his weight in fine diamonds. The Bible says "the price of a virtuous woman is above rubies," and as rubies are the most expensive of jewels, no further argument is necessary.

Modern industrialism has set a price upon total abstinence. More than two million positions in the industrial arena of this country are closed to men who use intoxicating liquors. Twenty-nine doors of opportunity in the business world are closed to men who use alcoholic liquors or tobacco. The Captains of Industry, railroad corporations and business men practically agree with the most advanced scientists of the world on the value of total abstinence. Dr. Kraepelin's world-famous experiments have demonstrated upon the most accurate and scientific basis, that alcohol introduced into the human system, even in small quantities, disturbs the harmony and well being of this wonderfully and fearfully made human organism. These are some of the indictments against alcohol. It interferes with accuracy of vision, lessens the ability to hear distinctly, interferes with accuracy of taste, smell and touch, lessens muscular precision and has a disastrous effect upon mental processes.

It is entirely within the realms of accurate, scientific truth, for you to tell any man, woman or child, that if ten glasses of beer make a man drunk, one glass will make him one-tenth drunk, and lessen his economic value to any employer, to that extent.



BLOWING BUBBLES AND WHAT CAME OF IT

LITTLE Peter and Prudie and Lyddie Sprague were keeping house while Mamma and Papa went to town. Grandpa Sprague was taking his afternoon nap in his room, so he did not count.

After they had tired of all their games, Lyddie said, "Let's blow bubbles!"

"Oh, yes, let's!" cried Prudie.

So Lyddie got the long new clay pipes, and Prudie a bowl of soapsuds and set it on the hearth of the broad, low chimney so they need not wet the floor, for the little girls had learned not to make work.

Then they began blowing bubbles in good

earnest. The bubbles soared like tiny balloons, now up, now down as the children puffed and chased them about the room.

By and by, one dived into the black chimney and disappeared. Then there was more fun, sending them off up its broad sooty throat and watching them sail out at the patch of blue at the top and rushing out to see them float off.

Then Peter proposed smoking into the bubbles, as grandpa did once for them. Grandpa's pipe lay on the mantel all "charged" and ready to light when he should get up. Prudie wanted to do this part of it.

"Huh! girls don't smoke!" cried Peter loftily.

"Ma'am Potter smokes! I've seen her! And she was a girl once, anyway!" cried Prudie.

"Well, it's squinched her all up", insisted Peter.

Prudie didn't want to be squinched up like Ma'am Potter, neither did Lyddie, so Peter put a live coal from the stove into the top of the pipe and puffed away manfully.

For a time they had great sport, watching the milky looking bubbles float gracefully off.

However, pretty soon Peter laid up the pipe, plunged his brown fists deep into his pockets and scowled dreadfully. Then his face turned very white and he began to whine dismally. Lyddie and Prudie, very much frightened, brought him catnip and spearmint leaves to chew. But poor Peter was too sick to chew them.

Just then Grandpa came out, and Lyddie ran to him with the doleful tale.

"Tut! It's Grandpa's pipe! Naughty thing for little boys—and big ones, too, I suspect."

"But does it make you feel like Peter?" queried Lyddie.

"Oh, it did once", said Grandpa.

"What made you want to do it again, then?" asked the little girl.

"The land knows, I don't!" groaned Grandpa, looking with pity at Peter's distress.

"Will Peter want to do so any more?" persisted Prudie, pinching a spearmint leaf and holding it to his pale nose.

"Oh, dear me, I hope not", cried Grandpa, sternly, throwing his pipe against the sooty chimney-back and breaking it all to pieces. "There, now, Peter, you and Grandpa will take the pledge not to smoke any more as long as we live. Shall we, sonny?"

"Ye-e-es, s-s-ir" gasped little Peter between his qualms.

When Mamma came home and saw Grandpa's old pipe lying in the chimney and Grandpa himself trudging off over the hill to the pines, she said he had gone off to fight a battle.

Prudie and Lyddie and Peter could not believe that dear old Grandpa wanted to fight anybody. They wondered what Mamma meant.

Do you understand?—*The Youth's Companion*.



THE COST OF A BOY

I READ the other day that it cost nearly \$2,000 to bring up a London boy and educate and dress him well. I said to myself, "That is because everything in the city has to be bought and living is high"; but I began to study the thing, and I found that a boy costs his parents a good deal.

When we count what a boy eats and what he wears, and the school-books he must have and the doctor's bills which have to be paid when he gets the measles or the scarlet fever, he will cost his folks at home at least \$100 a year. If a boy is given to breaking things, kicking the toes out of his boots and so on, he costs more than that; so when I am twenty-one and old enough to do for myself I shall have cost my father more than \$2,000.

Mother cooked my food, and made my clothes and patched them, and washed and ironed for me, and took care of me when I was a little fellow and whenever I was sick, and she never charged anything for that. If she were dead and father had to pay for all that, it would cost two more thousand dollars'

worth of work mother will have done for me by the time I am a man.

Four thousand dollars for a boy! What do you think of that? These are hard times. When parents put \$4,000 into a boy, what have they a right to expect from him? Is it fair for a boy to play truant at school, is it fair for him to play ball, go swimming, or hang around town all the time, when maybe his father's potatoes are not dug nor the wood brought in for his mother? Is it fair for him to disappoint them by swearing and drinking? Is it fair to forget his parents when he leaves home?

I remember a bright young man saying: "Some of our parents have put about all the property they have into us boys and girls. If we make whiskey decanters of ourselves they will be poor indeed; but if we make good citizens and substantial men and women they will feel as though they had good pay for bringing us up."

Boys, what are you worth to your parents?—*The Friend for Boys and Girls*.

THE PROTECTION OF THE SCHOOL CHILD

GOD intended the home to be the child's true shelter and first training-ground.

Here are made some of the earliest and most lasting of impressions. But as life is now circumstanced, the school has become essential for the development of the child's mind and his equipment for the day's work. Often, however, the teacher does not get a fair chance. Many of his pupils come to him in such a condition as to be unable to benefit by his instruction. These children, usually the offspring of alcoholics, may often be recognized at a glance. They are commonly underfed, unsuitably clad, unclean, and undisciplined. But the passing glance does not always detect what the teacher soon discovers, namely, that these children are intellectually dull, backward, or even mentally defective. Such scholars, when placed with others of similar age, lag behind and are found to be more or less incapable of learning any but the simplest lessons. They are generally lacking in brightness and powers of application, and their moral sense is often blunted. Laxity of mental and moral discipline is often the outcome of a home atmosphere in which cruelty, injustice and disorder prevail.

MENTAL DULLNESS

Much thought is being given to the condition of widespread inherent mental deficiency among so many school children. Inquiries show that about 40 per cent. of mentally defective children come of an alcoholic parentage. In the London County Council special schools for feeble-minded children, Dr. E. Sayer found that in 42 per cent. there was a history of drunkenness in one parent, whilst a similar history was found in only 6 per cent. of the children in ordinary schools. In Birmingham, Dr. W. A. Potts obtained very much the same results, 41.6 per cent. of the defective children having one or both parents alcoholic, and 22 per cent. of the ordinary school children being of alcoholic inheritance. It will be readily understood that such defectives, lacking in will power, fall easy victims to inebriety, and will in all probability ultimately join the large army of feeble-minded, lunatics, criminals and unemployables.

THE LAUNCHING OF HUMAN DERELICTS

The visitation on the children of the sins of their fathers, and in this case, especially, of the mothers, needs to be more realized and emphasized, especially by those who in any way have the care and responsibility of child

life, or the instruction of parents or those likely to become such. It is a side of the subject sometimes forgotten, or at all events passed over in silence. Nature unrestricted works for the elimination of the unfit, but we in our imperfect civilization often allow, and even encourage, their propagation. We willingly weight ourselves with the burden of human derelicts, and are slow to arrest the evil at its source and in its beginnings.

What can be done to stem the tide of intemperance in the coming generation? There are two forces, on the necessity for which all are agreed—*legislation* and *education*. When all is said and done, education, not only of the mind, but of the heart, affords the surest, strongest and best weapon wherewith to meet the powers of darkness. Never in our history has it been more necessary to realize that this matter is one of the highest moral importance.

THE PLACE OF EDUCATION

In the elementary and secondary schools there is great need for more definite instruction in the principles and practice of hygiene and temperance. Much of school teaching fades from the mind of a child, but much remains; and good seed sown upon apparently unlikely soil may ultimately bring forth fruit. Herbert Spencer has defined education as "preparation for complete living," and no child can be said to be completely prepared for the battle of life who leaves school in ignorance of those laws of hygiene and temperance on which the integrity and safety of his personal and domestic well-being depend.

IMPORTANCE OF HYGIENIC EDUCATION TO WOMEN

If women are to fight the temptation to drink, they must have a sound knowledge of the nature of alcohol and its harmfulness, and be taught the risks they run when taking it, either regularly as a beverage, or temporarily to relieve feelings of faintness, sickness, and pain.

PRACTICAL CONCLUSIONS

If we are to progress as a nation, it is essential that men and women—and especially women—should look at the subject in all its bearings. It is only by wide and comprehensive study that we can fully grasp the persuasiveness and powerful, permeating influence of the evil. We need thorough knowledge, sound judgment, and wise action, if we would prevent and arrest the deteriorating influence of alcohol upon our nation.—*British Journal of Inebriety*.

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

WINTER SUNSHINE

Wouldst thou for sunshine seek? 'Tis in thyself,
And therefore close at hand! Find out each day
Thy duties; and thy Father's just demand
To lean upon his strength new power will give
Thee, and at close of day, when the round world
Is still, thou shalt lie down in peace and say—
"In the glad sunshine of accomplished duties
I have been happy all this day!"

THE POTTER AND THE CLAY

WE have been hearing much of the waste of national resources in America, and statesmen, scientists, and practical patriots are spending time and energy lavishly to check them. But the waste of health, achieving ability and moral stamina through unhygienic and pernicious habits as far outstrips the waste of material resources as the price of an acre is out-valued by the worth of a human life.

The nation has too a wealth of undeveloped resources—its children. If, by preventive measures, we can save the possibilities of childhood from spoilation by debasing habits, we have conserved resources more precious than forests, or rivers, or mines; we have set in motion for humanity's uplift forces more potent than electricity, or water, or wind.

The molding of habit in childhood and youth, therefore, becomes the most important task to which the men and women of the twentieth century can set themselves. By it will be shaped American civilization of the next half-century. But success will depend very largely on the skill and promptness with which the school seizes upon and uses the best elements of half-a-hundred civilizations, turning them into the pattern of the ideal life.

The time is short. Only one child in three, we are told by official statistics, ever gets beyond the seventh school grade. Then two-thirds of our future men and women, the type of civilization of tomorrow, are gone from the influence of the school. Seven years at the most in which to establish the habits of a nation!

We can not trifle with those years. Every resource that the school can command should be brought to bear in making the training to health and sobriety clear, definite, purposeful. Help these children to see the reasons for obeying the laws of health, for abstaining from alcoholic beverages and narcotics. Establish within them the defences against disease and dissipation, the power to lay hold upon health and the self-control that subordinates physical appetite to intellectual and spiritual mastery.

Little disturbed by modern improvements, the potter and his wheel still fashion the clay as for thousands of years, and the clay, as ever, has to be of the right consistency.

Amid the modern catch-words of "social education," "biological engineering," "economic values," etc., the teacher will be wise who keeps his vision clear as to the main end to be attained—the training of a generation to intelligent appreciation of the individual and social conditions necessary to health and character, and, like the potter of the centuries, he will shape his clay when it will best receive and retain the form of the highest type of manhood and womanhood.

PUSH IT OUT

THE Editor hopes to live to see the day when it will not be necessary to use the long drawn out term, "alcoholic drinks and other narcotics", to describe a class of drugs that are properly all grouped under the one term "narcotic." At present we have to do it, lest some soul rise up and rebuke us with omitting alcoholic beverages. Now that it is fairly definitely settled that what seems like a stimulating effect of alcohol—the temporary activity it excites—is really the result of a narcotizing of the centres of control, the continued use of the term "stimulant" as applied to alcoholic drinks is misleading and ought to be abolished in all temperance and scientific literature on this subject. We are glad to be able to say that it was abolished from the columns of the JOURNAL years ago, and we have repeatedly called attention to the inconsistency of teaching that alcohol is not a stimulant and then describing alcoholic drinks as stimulants.

The Illinois Woman's Christian Temperance Union has taken a much needed step in the right direction by adopting at its last convention a resolution pledging the organization to cease to describe alcohol as a stimulant, and to designate it hereafter a narcotic irritant.

BREWERS OR CHILDREN—WHICH?

IT is time that the general public should realize the definite efforts being made by the brewers to break down the public school temperance education of the children of the United States.

The United States Brewing Association is sending to editors, with gracious permission to republish, an anonymous booklet, the publishers hidden under the initials "U. S. B. A." This booklet, "False Science in Schools," is an ill-concealed effort to discredit and break down the influence of this preventive instruction, and is but one of several similar publications being circulated by the brewers.

It is a re-hash of the report of the Committee of Fifty, a report which was long ago effectively answered in United States Senate, Document 171 (1904) which showed that the report utterly failed to prove its charges that the school text-books were inaccurate. Nine of the eleven American scientists quoted in opposition to the teaching given in the schools were imperfectly acquainted either with the literature on the alcohol question or with the teachings they criticized. A misrepresentation of the requirements for temperance education in this country had evidently been sent to foreign correspondents and such adverse opinions as were obtained were largely based upon these representations. Notwithstanding this misrepresentation, a large proportion of these foreign correspondents replied favorably to temperance education of children and youth.

Some of the very physicians whom this brewers' booklet quotes as opposed to temperance teaching, have led the movement in Great Britain for securing such instruction and cited the example of the United States as a reason why Great Britain should require the instruction for its children.

The animus of the brewers' booklet becomes clear in a supplemental article under the same cover entitled "Beer versus Tea" the drift of which is that two or three pints of beer a day are harmless or at least no more harmful than tea. It is also implied that if one is doing hard work, even more beer is permissible.

But President Eliot, whose name is used by the brewers in this pamphlet to break down school temperance teaching has just declared that scientific research proves that "even the moderate use of alcohol is objectionable; that the habitual use of alcohol in any form is lowering to intellectual and nervous power."

Again there is a slap in this connection at

the "unscientific" nature of the public school temperance instruction, presumably because it teaches the danger in beer.

Fortunately, this is no longer a matter of opinion but of proof.

Schnyder found in his ergograph experiments that with an amount of alcohol equal to that contained in less than 2 pints of beer a man's muscle tired sooner and did less work.

Smith and Kraepelin found in one of their experiments that the subject's mental working ability was lessened by from 25 to 40 per cent. after using the quantity of alcohol which would be contained in two to four pints of beer.

Bergman found that with a glass of beer school boys made more mistakes in mental



Brewers, or these.

exercises and showed greater mental slowness.

Laitinen found that when rabbits and guinea-pigs were given a quantity of alcohol proportional to that which a full grown man would get in one-half a pint of 3½ per cent. beer a day, the animals were more susceptible to diphtheria, and died sooner after infection, while the progeny of animals given alcohol weighed less at birth, gained less in the succeeding 20 days and showed less vitality than the progeny of normal animals.

The American public has borne much from the brewing industry, but the welfare

of the children of the nation is dear to every true man and woman. If the brewers want to hasten the coming of prohibition of the manufacture as well as the sale of beer and other alcoholic drinks, they can do it in no surer way than by meddling with the children.

The parents of this nation will not long tolerate a business which for its own selfish ends reaches out for the children to make them the victims of a drink that in thousands of cases has led to injury or even destruction of body and soul.



WHAT WE OWE TO LABORATORY INVESTIGATION

BY E. L. TRANSEAU

A WRITER in an English medical journal, whose opinion unfortunately, has been honored by the scissors-man of a popular American magazine, thinks that the advocates of temperance would do more for their cause "by urging the demonstrable evils of excess" than by deductions from laboratory findings that are distasteful to "moderate opinion."

If the temperance reformer were to act upon this advice he would have a very easy task, for "the demonstrable evils of excess" are read and known by all men. They have been recognized for ages, but the fact that the toper is still here shows the inefficiency of that method of preaching temperance.

The writer says: "While deploring as sincerely as any the curse which some men make of alcohol not only for themselves but for their dependents and society in general, we are not prepared to shut our eyes to its value in the promotion of good-fellowship among those who have more self-control".

It is in the overthrow of the false valuation of alcohol expressed in the last lines that the laboratory experiments are particularly valuable. They would not be if, as this writer wrongly assumes, they contradicted the careful observations of everyday life. Instead of doing so, they verify and explain some of the most common every-day occurrences.

SELF-CONTROL WEAKENED

Take that classical experiment of Kraepelin's in what he calls "choice reaction". It is thus described in the excellent article of Dr. Henry Smith Williams in the October *McClure's*:

"The subject would place each hand on a telegraph key, at right and left. The signals would then be varied, it being understood that one key or another would be pressed promptly, accordingly as a red or white light

appeared. It became necessary, therefore, to recognize the color of the light and to recall which hand was to be moved at that particular signal.

"The tests showed that after the ingestion of a small quantity of alcohol, say a glass of beer, there was a marked disturbance of the mental processes involved in this reaction. On the average, the keys were released more rapidly than before the alcohol was taken, but the wrong key was much more frequently released than under normal circumstances."

Why were these mistakes made? Why did the subject strike the key before he had decided upon the right one? Because, to quote Prof. Munsterberg, "his checking centre" was inhibited.

When the English medical writer has duly reflected upon what happens when the "checked center is inhibited," he may be ready then to change his opinion concerning the value of alcohol in the promotion of good fellowship. One illustration of a common happening in such a condition is described by a German writer, in substance as follows.

BEER WEAKENS RESOLUTION

A student is working in his room in the evening preparing for his examinations. Presently he feels thirsty, and says to himself, "I will run across the street and get a glass of beer and come right back and finish my work."

He goes and drinks a glass, talking meanwhile with the friends he finds there. When he has finished one glass, he drinks another. By this time his checking center is so weakened that he takes a third, and then his resolution to return to work fades out, and he remains for the rest of the evening.

Of course no sensible person draws from this illustration the conclusion that every one who takes a glass of beer continues to drink until he has forgotten duty and obligations. It is simply one illustration of laboratory findings verified in every-day life.

Nor do we need to go to Germany for such illustrations. They are all about us.

Why does the young man, who still retains his self-respect, drink more than he intends when he goes out among friends. Because the same influence that starts him to prattling weakens his ability to refuse another glass.

FROM CAUSE TO EFFECT

There is another illustration, too dark almost to mention, but demanding more general recognition because of its very fearfulness. At one end of the chain of cause and effect are a glass of wine, a young girl, a weakened checking center. At the other end, are a father and mother, a desolate hearth, an unspoken name.

Is it a fallacy of deduction to see that an agent which can cause loss of self-control in the laboratory can also cause it in the drawing room or restaurant?

But the writer in question left open for himself an avenue of escape. "Those who have more self-control" may, thankful that they are not as other men, promote good fellowship with wine.

Once it would have seemed childish to ask, whence comes this lack of self-control in the weaker brothers, whose attempts to follow the example of their fellows result in disaster? A hundred possible reasons would have been suggested. Now, thanks to the laboratory findings, we can demand an intelligent answer to the question.

The kennel and cage experiments in hereditary alcoholism (Hodge and Laitinen) align themselves with human experience, and point the accusing finger, not at the unstable son, but at the unmindful parents.

The Swiss investigator (Overton) who demonstrated that alcohol penetrated most easily the most finely organized cells, indicated an answer to the question, Why do so many of the most promising youths become its victims?

But for the laboratory investigators of the last fifteen years, we might have gone blundering along for another half dozen centuries trying to cure intemperance with homeopathic doses of the drug that causes it.

Now, with the information these investigators have furnished us, and our present means of spreading it, and with our twentieth century conceptions of the brotherhood of man, we shall be without excuse if we do not abolish the custom of using alcoholic beverages before this nation celebrates its next centennial.



A well-known Protestant bishop relates that while on a recent visit to the South he was in a small country town, where, owing to the scarcity of good servants, most of the ladies preferred to do their own work.

He was awakened quite early by the tones of a soprano voice singing "Nearer My God, to Thee." As the bishop lay in bed he meditated upon the piety which his hostess must possess which enabled her to go about her task early in the morning singing such a noble hymn.

At breakfast he spoke to her about it, and told her how pleased he was.

"Oh, law," she replied, "that's the hymn I boil the eggs by; three verses for soft and five for hard."

TIME'S LIGHT-KEEPERS

Oh, let it not in any port be said
By watchful pilots that some light of thine
Failed on a certain stormy night to shine
Beside the harbor head.

Life's seamen, by whatever coasts they fare,
Call out to one another, passing by;
"Trim, trim the lamps, raise every beacon
high—
There are no lights to spare."

FRANK WALCOTT HUTT.



Believe me, whatever of dignity, whatever of strength, we have in us, will dignify and will make strong the labours of our hand; whatever littleness degrades our spirit will lessen them and drag them down. Whatever noble fire is in our hearts will burn also in our work; whatever purity is ours will chasten and exalt it; for as we are so our work is; and what we sow in our lives that beyond a doubt we shall reap, for good or ill, in the strengthening or defacing of whatever gifts have fallen to our lot.—*Lord Leighton.*



The hardest foe to fight is custom and prejudice.



Grammar Lesson

SEVENTH AND
EIGHTH YEARS

BODY HEAT

SEVENTH AND EIGHTH YEARS

NOTE.—Several days before the lesson, in the presence of the class cut a coil of magnesium wire in two pieces. Rub one piece bright with emery paper and place it in a bottle in which are a few drops of water. Wet and keep damp a small bright nail. Set the bottle, the other piece of wire, and the nail away for use when needed.

The day before the lesson place upon the blackboard the following points which are to be investigated by the pupils and reports rendered. If the reports are required to be made out neatly in writing the work will be done more carefully. This will also help prepare the way for careful notebook work later when physics and chemistry are studied.

WHAT is meant by temperature of the body? How does the temperature of the following creatures compare with that of your own body; fish; frog; crab; cat; dog; bird? What name is often applied to the first three? to the last three?

What is the condition of all parts of the flesh of the first class? Of the second class including one's own body?

Which is the warmest place in the body? (Armpit. The mouth is properly a cavity.) Which are the coolest parts? (Tips of nose and of ears.)

Which is the warmer, the forehead or the side of the head? the flesh over the artery in the wrist or on the back of the hand?

Which has warmer flesh, a healthy child or an aged person?

At what time of year do plants grow best? What happens to outdoor plants when the thermometer goes down to 32 degrees? if they are exposed to a hot fire? What effect do great cold and great heat have upon animals?

Call for one or more of the reports. Discuss briefly, bringing out the points: (1) that there are two classes of animals as respects body heat; (2) that the warm-blooded animals and man have bodies that are warm in all parts; and (3) that plants and animals need warmth to grow and are injured by freezing or scorching.

HOW THE BODY LOSES HEAT

Show a hot brick which has been kept wrapped in a cloth. What is the temperature of the cloth in which the brick has been kept? Let some child hold his hand near the brick and report that the brick gives out heat, i. e. *radiates*. Place a thin strip of metal on the hot brick for a short time. Feel of the metal. How has it changed? Hold one end of the metal in a flame. How does the temperature change? See that the class notes that the end touching the fire heats first and then the heat travels or is conducted to the further end. In each of these cases the cooler thing was touching the heated object or the flame and the heat moved or was *conducted* from one to the other. What happens when the air from a hot room is permitted to pass through the door into a cool room? Mention several ways in which heat is conducted. Lead the class to see that (1) all warm objects (as a hot brick, stove, the sun) *radiate* heat and (2) that usually when two objects one of which is cooler than the other, touch each other, the heat from the warmer one *passes*, is *conducted*, into the cooler till they are the same temperature.

Let a pupil hold his hand near a slate or a blackboard. Does it radiate heat? Hold the hand near the face. Note that there is a slight feeling of warmth. What is the temperature of a bed in which a person has slept over night? What is the feeling of the clothes on the arm? How does the temperature of a cool room change if several people remain in it some time? Breathe upon the hand. What is the feeling? In what three ways does the body lose heat? Does this go on all the time?

Is the body itself as warm in the morning as at night? In winter as in summer? Is it very much different in the baby than in the grown person? What happens to the body when it is exposed to great cold or heat? Show that animals like plants can not grow well unless they are comfortably warm, and they perish from too great cold or heat.

The body is always warm under normal conditions. How warm does it remain in health? Direct each of two or three of the class to take the temperature of a mate with a clinical thermometer (or a common thermometer detached from its mount). See that it is carefully cleaned after each use and take occasion to emphasize the danger of passing *anything* from mouth to mouth uncleaned. What is the constant warmth, i. e. the temperature, of the body?

HOW THE BODY HEAT IS GENERATED AND DISTRIBUTED

When the brick has been giving off heat

for some time what will be the result? What would be the only way it could be kept at a constant heat? What would have to be done to a stove daily if the brick were to be kept warm indefinitely?

If the body constantly remains at the same temperature although it is always giving off heat, what must be going on continually within it?

How do we keep our homes warm? The answers to this question will be various. Show that all methods depend upon fires; that stoves warm the house only in parts; that hot water heating is most like that of the body. Why? What is the first supply necessary for heat whichever way we get it? Mention several kinds of fuel. Speak of the fact that many things may be used for fuel, even food, as for instance, during one very cold winter farmers in the Northwest burned corn.

What would happen if a fire were laid with plenty of kindlings and fuel and lighted, and then the stove closed air-tight? What part of the *air* is necessary in order that combustion or burning may go on and heat be generated? (Define word if new.)

Ignite the piece of dry magnesium wire with a match. The class notes that it burns rapidly with heat and light and leaves only a little white ash (magnesia). This is one kind of burning or *oxidation*. Show the damp wire. Class note that the white ash (magnesia) upon it is similar to that left from the burned piece. Show the rusted nail. Class note rust. These are also examples of oxidation which acted more slowly than in the first case and in the presence of moisture; air (oxygen) has been present. In time they would be as entirely consumed as was the burned wire. They, too, could we measure it, are giving off heat. The second piece of wire, in the end, will have given off as much as the first.

Make very clear the points: (1) that uniform constant heat whether in an object like the brick, or in the body can only be maintained by continual fresh supplies of fuel; (2) that we maintain heat in our houses by the use of fires, which require fuel and the oxygen of the air; (3) that when fuel as wood, coal, oil, or this magnesium wire is burned, or oxidized rapidly, it yields heat and usually light; (4) that oxidation may proceed slowly and in the presence of moisture as in the case of the wire, and will also in the end yield as much heat as if it had oxidized rapidly like the first piece of wire; (5) that if the body is to be kept warm it must have *fuel* (food) and *oxygen*. Recall that all oxidation requires oxygen and can not

occur without it.

Which produced the quickest, hottest fire, the magnesium wire ignited with the match or that which oxidized slowly? Which heat would last longer and be more uniform? Which is warmer, the warmest place on the body or the fire from the first wire? By which method of oxidation must we think the body is warmed?

Recur to the matter of warming the house by the method of hot water heating and ask someone to describe the apparatus.

NOTE.—If it is unfamiliar, explain briefly that it consists of an iron fire-box around which a circular water tank is arranged in such a way that



when the fire is kept up the water becomes very hot and flows through pipes which pass to the different parts of the house. The hot water gives off most of its heat to the rooms thus warming them, becomes cool in the process and then flows back to be reheated and circulated again and again in the same manner. Note that the temperature of the circulating fluid was cold at first but was raised to a high temperature by contact with the fire.

What is the source of the heat? In this case, what fuel was used and with what does it combine? What was the temperature of the water at first? How was this circulating medium raised to the temperature required to heat the different parts of the house? What is the circulating fluid of the body? In what respects does the circulation of the blood resemble the system of hot water heating? In what way does it differ? Show that while

the water is all heated by a single furnace in the cellar, the blood is heated by oxidation in the cells corresponding to millions of tiny fires on the outside and all along the blood tubes. What is the fuel for this oxidation? In what way is it prepared for the purpose?

Discuss choice of foods with regard to body temperature consulting: age, occupation, climate, season.

HOW BODY TEMPERATURE IS REGULATED *By the Body Itself.*

If the room is too warm, how do we cool it? If too cold?

If you have been standing still out of doors on a cold winter day, what is the color of the face? Why pale or "blue?" Make clear the three results that follow contraction of small blood vessels of the skin: (1) quantity of blood sent to the surface lessened; (2) less sweat is secreted so skin becomes a poor conductor of heat from the body; (3) shivering which sets muscles to work to generate more heat.

Why is the face flushed when exercising vigorously or in hot weather? What advantage is this to body temperature? Why does a wet cloth on wrist or temple cool one more quickly than without it? What then, is the relation of perspiration to body temperature?
By Clothing (See next column).

HYGIENE OF BODY TEMPERATURE—SEARCH QUESTIONS

1. Why is it important that the body be evenly protected against heat and cold?
2. Why should one continue to exercise vigorously if drenched by rain?
3. Why do children take cold more quickly if they get shoes and stockings wet than if they wade in water barefoot?
4. It is said that when Dr. Tanner made his long fast he stayed in bed warmly covered. Why?
5. Why are users of alcoholic drinks more liable to sunstroke in summer and to freezing in winter than abstainers under the same conditions?

ILLUSTRATIVE EXPERIMENTS

(From *School Science and Mathematics*.)

Experiment 1. To learn how the evaporation of moisture affects the skin: The temperature of the air in the room is noted on a chemical (or ordinary) thermometer. The thermometer is then held in some water until the temperature goes no lower (remains constant). Now raise the thermometer out of the water and hold it in the air, noting very carefully whether the temperature rises or falls. Success depends on carefully noticing the movements of the free end of

the mercury column. Does this result indicate whether evaporating moisture warms or cools the bulb? Apply the facts learned here to the heat regulation of the skin, by moisture.

NOTE.—The effect of evaporating moisture on the skin may be shown without a thermometer. The wet hand is held over a flame or other source of heat. How does it feel? Hold the dry hand in the same place for comparison. What is your experience?

Experiment 2. To learn in what ways the skin gives off heat other than by evaporating moisture from its surface: (a) The degree at which the thermometer indicates the air of the room is noted and the bulb of the thermometer is then held in the hand until the mercury has risen as high as it will, counting 100. The degree is now again read. What has the skin had to do with this phenomenon? This illustrates conduction of heat. (b) The hand is held so as to form a little cup, the thumb and forefinger forming the edge. Into the hollow thus formed the bulb of the thermometer is held in such a way that it nowhere touches the hand ($\frac{1}{2}$ cm. distant). How many degrees does the temperature change? Cause? What you have now learned illustrates radiation of heat.



CLOTHING

Uses of Clothing.—Show that clothing has three main uses: (1) To protect the body from heat, cold, wind, rain and snow; (2) to protect it from injury and (3) to maintain warmth. (Why?) how has nature provided clothing for animals? Why are they different in this respect from men?

Materials for Clothing.—Mention the different materials from which clothing is made. Which of them are obtained from the animal and which from the vegetable kingdom? Show silk cocoons and raw silk, cotton balls, flax and if a compound microscope is available, allow class to examine single hairs of wool, threads of cotton and linen and note how they differ in appearance. Have at hand if the children's clothing does not provide it, pieces of cotton, linen, silk, woolen, and fur which may be consecutively put on some child's arm while one or more try the temperature over the cloth with the hand. Through which does the flesh seem the warmest? The coolest? What do we say of a substance or material which allows heat to pass through it very readily? Very poorly? Which, then, of these materials is the best conductor of heat? The poorest? Which would be coolest for summer? Which the best

for cold weather? Why? See that the children clearly understand that cloth which is a good conductor of heat is coolest in summer because it lets the body heat off, while fur is warmest because it is the very poorest conductor of heat. On the other hand the thicker materials also keep the cold out, for the air is much colder than the body.

Why do people in the tropics like to wear white garments? Explain that white throws back or, as we say, *reflects* the sun's rays better than dark colors. Dark colors absorb heat and so are hottest. (Colors make little difference except in direct sunlight). Can you guess why the American battle-ships in the tropics were painted white except during war? It is also better to wear light, or at least pretty colors for most persons feel happier in them than in dull, dark tones.

THE HYGIENE OF CLOTHING

NOTE—The following points should succeed the discussion in each case and as they are evolved write them on the blackboard and require the children to copy them. Children can easily be led to see the reasonableness of hygienic rules and will be more likely to follow them if they themselves seem to formulate those rules.

(1) No article of clothing should be so tight as to interfere with the circulation of the blood.

Class place the fingers on the sides of the throat and discover beating of pulse. Note that these two large arteries carry most of the blood to the brain and similar large veins (the jugulars) bring back the blood charged with impurities to be thrown out of the body. If these great blood vessels should be squeezed by a tight collar what would be the probably effect upon the work of the brain? Why headaches? How would habitual wearing of tight hats be likely to cause thin hair and baldness?

(2) Garments should not be so shaped as to change the natural shape of the body.

Have each child draw at home the shape of the bare foot on paper and beside it the shape of his shoe upon it, compare the two. Think how much your body weighs and then consider that the little surface of the soles of the two feet when you stand, and of *one foot* when you walk or run, supports that weight. The child's bones and flesh are softer than those of a grown person. What reasons why children especially should wear shoes that are shaped very nearly like the foot and quite large enough for the toes to spread slightly when the weight of the body is thrown on the foot? When people disobey this rule how does nature punish them?

Mention the organs in the trunk. What is the nature of lung tissue? Of liver tissue, etc.? Look on the chart or manikin and

notice how carefully the organs are packed in. Is there apparently any room to spare? What happens when we breathe properly. Measure the waists of one or two children. There waists are — inches and, as the chart shows, there is just room enough by close packing to accommodate the liver, stomach, etc. The waist has to stretch when a breath is drawn in. Suppose now we put a belt, a corset several inches smaller about the waist, what would become of the organs inside? (Draw a sketch showing the outlines of the organs in such a trunk). Where does the stomach lie and in what position compared to its former location? What has happened to the soft liver? What about breathing? How would you like to work hard night and day as the lungs do and be obliged to be cooped up in two-thirds of the space you need in which to stand erect and work your limbs? Can you think of any reason why people who wear tight belts and stays often have pasty skin and pale faces instead of red cheeks?

(3) No garment should be unnecessarily heavy.

Show that furs about the throat in moderate weather and other over-warm garments call too much blood to the surfaces so covered, cause sweating, and thus are likely to result in congestion of blood and colds. Such garments should be reserved for severe weather and lighter ones worn at other times.

(4) Garments should hang from the shoulders or be fastened to others which do.

Examine the bony framework as shown on the chart. At what two places are there strong, bony cross-pieces, if we may so call them? Near which one are there numerous soft organs? With this idea in view, point out the one best adapted to support the strain of clothing. The organs in the abdomen are injured and find it very difficult to do their work when they are dragged down by the weight of heavy clothing.

GENERAL HINTS

Add a teaspoonful of borax to the starch in which light inflammable dresses and muslin curtains are to be dipped and it will make them much less easy to ignite from matches or other open flame. This is particularly serviceable at the time of year when the clothing of children frequently catches fire from brush fires.

Wash new clothing intended to be worn next to the skin before wearing it. Colored stockings may have remains of poisonous dvestuffs and cause skin eruptions or sores. All clothing may have been handled by the uncleanly or the diseased.

As to the time for changes from light weight clothing to heavier, or *vice versa*, consult the thermometer rather than the calendar.

Wool on account of its nap more readily absorbs odors and retains disease germs, hence physicians and nurses caring for people suffering from infectious diseases would better wear cotton or linen garments.

Avoid chills and possible colds by changing hose or underclothing after wearing shoes or over garments of rubbers. The clothing has become damp from the perspiration which has collected, and thus the body heat passes off too fast and chilling results.

AN EFFECTIVE TEACHING DEVICE

IN the center of a good-sized sheet of paper, write in clear, black ink the word "B E E R." Make a solution of copper sulphate by dissolving in a quarter of a tumbler of water enough copper sulphate to cover a quarter dollar. With this solution paint of water enough copper sulphate to cover a quarter dollar. With this solution paint around the word BEER the following phrases:

- Harmful in athletics.
- Spoils good marksmanship.
- Makes boys poor scholars.
- Makes a man do poorer work.
- Decreases ability to memorize.
- Takes money and family needs.

Other sentences may be added or substituted to suit local conditions. When dry, these sentences will not show on the paper as held before the class.

Discuss with the class the reasons why beer and other alcoholic drinks should not be used, leading up to the fact that they are deceptive, and seem to make men jolly and warm and strong, etc., but all the time the real effects are taking place, though we may not see them at once.

Hold the paper face side down over the fumes of ammonia water and the concealed effects will come out strongly.

WHAT THEY SAY

THE attractive colored charts shown by The Scientific Temperance Federation in connection with the state convention of the Massachusetts Christian Endeavor Society are of special interest to parents, physicians and teachers, as they illustrate the relation of drink as shown by standard scientific research upon health, longevity, infectious and nervous diseases, physical and mental efficiency.

The charts have a wide range of subjects and are a novelty in this country, some of

them having been reproduced by the Federation from German sources, others being original presentations of facts not hitherto graphically illustrated.—*Lynn (Mass.) Evening Item.*

These charts are available at a moderate rental for conventions, institutes and no-license campaigns. Fully 15,000 persons saw them in the five months after their completion in June, 1908.

A LARGE work on the deleterious effects of tobacco by E. L. Carvajal, M. D., has recently been published by the Mexican government "as a work of public utility." The author, who admits that he himself is a tobacco user, advises as a prophylactic measure strict enforcement of regulations prohibiting smoking in schools, public offices and other public places over which the police have control, as the habit of smoking is almost invariably acquired by imitation. He appeals to the authorities to repress the use of tobacco among boys and to physicians to dispel the popular idea that the tobacco habit is harmless. In conclusion he appeals to his "companions in slavery" saying, "Let us warn the innocent who sin from ignorance of the calamitous results of tobacco."

That breathing tobacco smoke caused a slowing of the heart beat and other signs of poisoning, is the conclusion of an investigator who has tested the matter upon both men and animals at the Imperial Pathological Institute of Berlin. As with some other poisons, a degree of toleration may be developed by habituation, so that quite large amounts are required to produce these symptoms of poisoning in men who are accustomed to smoke a great deal.

Digestion, however, is disturbed by certain products of tobacco that are soluble in water, even when there is little nicotine present. It seems apparent, therefore, that while the nicotine is responsible for "tobacco-heart," other substances in tobacco may be the cause of a "tobacco stomach," and that Dr. Richardson was justified, therefore, in holding tobacco to be a cause of dyspepsia.—*Translated and summarized for the SCHOOL PHYSIOLOGY JOURNAL from Hygienic Rundschau.*

"The type of young man that we need most of all in the world today is not so much the brilliant chap; the fellow of unusual attainments; but the one of moral nerve; the one who will glorify the common task; who has a backbone where others have a wishbone."

FOREIGN PUBLICATIONS ON THE
ALCOHOL QUESTION

[Continued from the November JOURNAL]

THE JOURNAL will forward to foreign publishers orders received with cash for any of the following literature desired by its readers provided, orders are received by January 10, 1909. All not otherwise indicated are in the German language.

THE STUDENT'S PART IN THE ALCOHOL
QUESTION

	Price
Students and the Alcohol Question. Prof. H. Buchner.	\$.08
Student Life and Abstinence. Dr. A. Fick.	\$.08
Youth, Evolution, Culture, and Narcosis. Dr. A. Forel.	\$.25
Drinking Customs: Their hygienic and social bearing and their relation to academic students. Dr. A. Forel.	\$.08
The Higher Schools and the Alcohol Question. Dr. Hartman and Prof. Weygandt.	\$.15
Alcohol and Youth. Prof. Emil Kraepelin.	\$.08
The Academic Youth and the Alcohol Question. Prof. E. Kraepelin.	\$.08
Students and Alcohol. George de Lee- ner. French.	

THE ALCOHOL QUESTION AND INDUSTRY

Workmen's Insurance and Alcoholism. Dr. Weymann.	\$.13
Alcohol and Transportation. Otto de Terra.	\$.15
Alcoholism and the Labor Question. Dr. H. Herkner.	\$.10
The Railroad Anti-Alcohol Association. Otto de Terra.	
Alcohol and Safety in the Railroad Service. Otto de Terra.	\$.20
An Appeal to Railroad Men.	\$.05

Should One Use Alcohol During Work? Dr. Alfred Grotjahn.	\$.09
Does Alcohol Increase Working Ability? Dr. Hugo Hoppe.	\$.08
The Alcohol Question in its Relation to the Labor Question. Dr. Herman Blocher.	\$.08
The Struggle Against Drinking Customs and What it Means for the Workingman. Dr. G. von Bunge.	\$.07
Workmen's Insurance and Alcohol. Councillor Hansen.	\$.10

POLITICAL AND ECONOMIC ASPECTS OF THE
ALCOHOL QUESTION

Alcohol Monopoly and the Alcohol Tax. Otto Lang.	\$.08
The Swedish Alcohol Legislation and the Gothenberg System. Oskar Peterson.	\$.30
Alcohol in Public Institutions. Dr. Eugene Bleuler.	\$.08
Alcohol and the German Nationality. Dr. W. Schultz.	\$.08
Alcohol and Crime. J. Gonser.	\$.10
The Duty of the Government in the Struggle Against Alcoholism. Councilman Rath.	\$.13
Sidelights from the Annual Reports of the German States. Councilman Kappelmann.	\$.18



At the beginning of the recent Russo-Japanese war a schoolmaster told a class of boys the cause of the fighting, and then asked all who favored the war to hold up their hands. Up went every hand but one. "Well, Jack, why are you opposed to the war?" asked the master.

"'Cause, sir, war makes history, an' there's more now'n I can ever learn," was the totally unexpected answer of the youngster.

NEW SCIENTIFIC TEMPERANCE LEAFLETS

PRICE PER 100

Social Service in the Temperance Reformation	- - - -	\$2.00
Important Place of Physiology in the School Curriculum	- - - -	1.00
The Problem of Americanizing One Million Immigrants Yearly	- - - -	.75
Scientific Temperance in the First Six School Grades	- - - -	.30
International Course of Study	- - - -	2.00
Alcohol as it Affects the Brain and Nerve Tissue	- - - -	.75
Relation of the Drink Problem to the Perpetuity of the Nation	- - - -	1.00
The Young Men and Tobacco	- - - -	2.00
Why the Cigaret is Specially Harmful	- - - -	1.00
The Boy and the Cigaret	- - - -	3.25

Travelling Loan Exhibit

— OF —

Attractive, Anti-Alcohol

CHARTS

ENTIRELY NEW

For Pupils, Teachers, Professional
People, the General Public

EXHIBIT consists of 25 Colored Charts (framed, size 22 x 28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other infectious Diseases, etc. (See JOURNAL p. 64). No objectionable details. Excellent for No-License Campaigns.

Send for Full Information as to Expense
and Plan for Use.

Scientific Temperance Federation

23 Trull St., Boston, Massachusetts

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

Purpose, Methods, Advantages, Membership

An Educational Temperance Organization

Purpose.—To make known in every possible way, in popular form, the proven facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

Methods.—The dissemination of facts by the following and other methods: **Personal Correspondence, An Editor's Press Circular, Loan Exhibit of Scientific Charts, Popular Leaflets, The School Physiology Journal, A Stereoptican Lecture.**

Its Membership

Advantage. All members receive free *The School Physiology Journal*, notices of useful new publications, samples of leaflets or other information published by the FEDERATION.

Associate Membership is open to all who desire (1) to have fuller acquaintance with the alcohol and narcotic question which membership in the FEDERATION affords, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance. Anyone may become an Associate Member by the payment of the annual fee of \$2.00.

THE SCIENTIFIC TEMPERANCE FEDERATION has unique place to fill; a distinct message and work. Its aims are fundamental and practical.

Address all contributions, correspondence, inquiries, etc., to THE SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull Street, Boston, Mass.

Combination Journal==Magazine Offers

Almost any Periodical published, furnished with Journal at Reduced Rates.

Let us know what Magazines you want and will make the
PRICE RIGHT

World's Work,	\$3.00	} OUR PRICE \$3.00	Review of Reviews	\$2.00	} OUR PRICE \$2.60
Delineator,	1.00		Success, or any	1.00	
Altruist or Mother's Magazine . . . . .	.50		Class A Magazine . . . . .	.60
Physiology Journal . . . . .	.60		Physiology Journal . . . . .	.60
Suburban Life	\$3.00	} OUR PRICE \$3.00	Delineator	\$1.00	} OUR PRICE \$2.00
Women's Home Companion	1.00		Everybody's	1.00	
or any Class A Magazine			Physiology Journal . . . . .	.60
Physiology Journal, . . . . .	.60			

TEACHER'S GROUPS.

Normal Instructor,	\$.75	} OUR PRICE \$1.00
School Physiology Journal, . . . . .	.60
Normal Instructor,	\$.75	} OUR PRICE \$1.65
Primary Plans,	1.00	
School Physiology Journal, . . . . .	.60

CLASS A.

Success,	\$1.00	} Any 1 with JOURNAL \$1.15
Woman's Home Companion,	1.00	
American (Leslie's),	1.00	} Any 2 with JOURNAL \$1.80
Our Little Folks, (new)	1.00	
American Motherhood,	1.00	} Any 3 with JOURNAL \$2.50
Primary Plans,	1.00	
American Boy,	1.00	
Altruist, *	1.00	

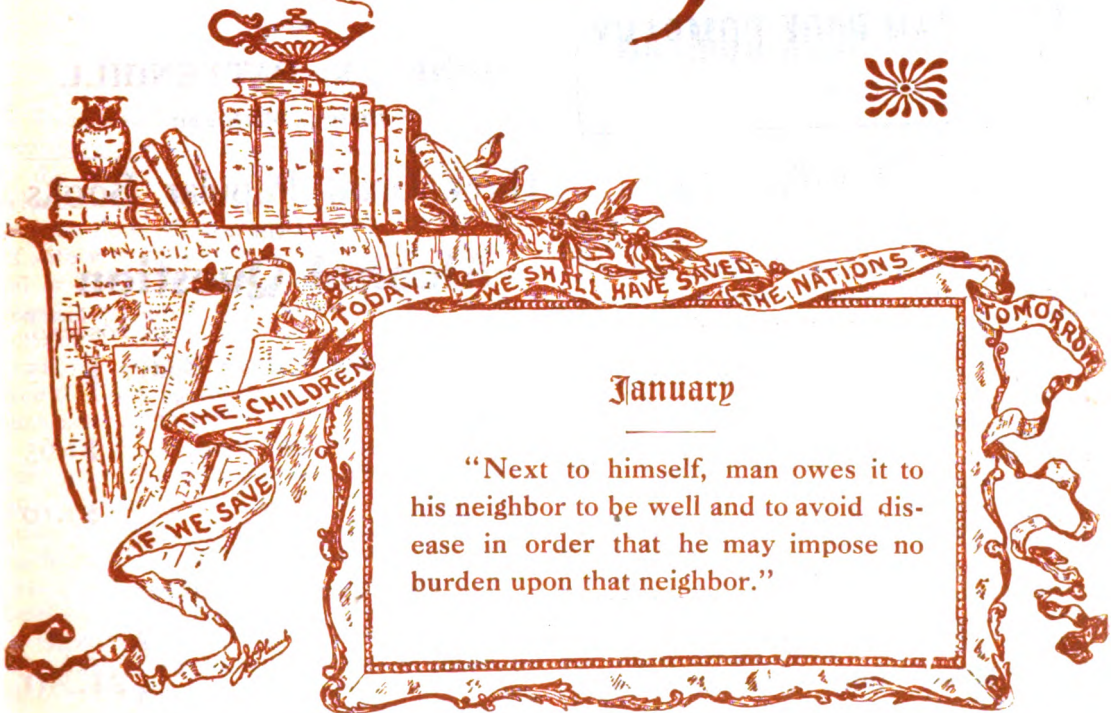
Less 15c if this is chosen.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull Street, Boston, Mass.

Please mention the JOURNAL when writing to advertisers.



THE SCHOOL PHYSIOLOGY JOURNAL



January

"Next to himself, man owes it to his neighbor to be well and to avoid disease in order that he may impose no burden upon that neighbor."

Just Published

Carpenter's How the World is Clothed

60 cents

Takes the children on a personally conducted tour around the world to investigate the sources of their clothing. They start out first to those regions which produce the vegetable fibres of commerce, including cotton, flax, hemp and jute. Then comes the study of animal fibers, such as wool and silk; of leather, rubber and furs: and this plan is followed as to every other article which forms a part of clothing, including feathers and jewels, needles and pins. The book takes up not only the production of the raw material, but also its transportation and the processes of its manufacture. The illustrations are numerous and novel.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

• CONTENTS •

	PAGE
The Moderate Drinker	65
Race Perpetuity	66
Premature Death Due to Alcoholism	67
Dangers in the Use of Beer	68
The Age in Which We Live	70
The New Year's Outlook	70
Editorials	72
American Scholarship and Morals	73
Invitation to Establish an International Union of Abstaining Teachers	73
Some of the Year's Scientific Achievements	74
Primary Lesson—Beer	76
Why Warn Against Beer	76
The Beauty of Water	77
Mental Hygiene	78
Books Received	79

THE BEST YET!

New Wine and Beer Leaflets

False Claims for Wine
Wine a Peril to Childhood
Wine Does not Drive out Drunkenness
Alcoholism in Wine-growing Countries
Commercial Fictions vs. Disinterested Facts about Beer.
Alcoholism and Tuberculosis

Prices very low — Send \$.05 for samples

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.

\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

Three Great Popular Books

— ON THE —

Alcohol Question

PRICE
POSTPAID

Alcohol and the Human Body, \$1.65

By Sir Victor Horsley and Mary Sturge, M. D.
New Edition ready about Jan. 1, 1909.

Psychology of Alcoholism, - \$1.65

By Geo. B. Cullen, B. D., M. A., Ph. D.

The Saloon Problem, - \$1.10

By Prof. J. N. Barker, Best All-round Book on
Economics and General Aspects.

Combination Offers

Alcohol and the Human Body, \$1.65	} ONLY	\$1.80
Psychology of Alcoholism, 1.65		
Physiology Journal, one year, .60		
The Saloon Problem, \$1.10	} ONLY	\$1.40
Physiology Journal, one year, .60		
Three Books and Journal, one year, }	ONLY	\$3.85

Write for prices on any other desired combination.

"Willie," said the teacher, "form a sentence the first person. 'Adam lived in the garden of Eden.'" replied Willie, promptly.—S. H. Review, August, 1907.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVIII

BOSTON, JANUARY, 1909

No. 4

I WILL

I will start anew this morning with a higher,
fairer creed;
I will cease to stand complaining of my ruthless
neighbor's greed;
I will cease to sit repining while my duty's call is
clear;
I will waste no moment whining and my heart shall
know no fear.
I will look sometimes about me for the things that
merit praise;
I will search for hidden beauties that elude the
grumbler's gaze;

I will try to find contentment in the path that I must
tread;
I will cease to have resentment when another moves
ahead.
I will not be swayed by envy when my rival's
strength is shown;
I will not deny his merit, but I'll strive to prove
my own;
I will try to see the beauty spread before me rain
or shine—
I will cease to preach your duty and be more
concerned with mine.

—S. E. Kiser, in Record-Herald.



THE MODERATE DRINKER

From an address by L. D. Mason, M. D., Brooklyn, N. Y.

What constitutes moderate drinking, or the temperate use of wine, beer or spirits? What is the established, definitely ascertained and scientifically determined quantity that we can use daily or habitually within the bounds of safety, and exclude any possibility of mental or moral or physical degeneration? The popular notion is, any amount this side of inebriation. The fact is, science has failed to establish a safety limit, because that limit would differ in every case. There can be no such zone of safety.

We do not know how soon a person by the daily use of even a mild vinous beverage may become accustomed to it, and thus acquire the habit. I mean the daily use, say of a glass of wine three times a day, the usual prescription. Such would depend on the tendency of the person to hereditary inebriety.

The mother who uses alcoholic beverages habitually, even in moderation, may beget a child with the alcoholic diathesis or tendency, or it may be born with physical or mental conditions involving defects due to alcohol, or the nursing mother, through her own milk, using alcoholic beverages habitually, under the conditions considered, may seriously affect her offspring, or the taste for alcohol may be directly cultivated, as is the custom so often prevalent among the lower classes, by an occasional drop of the "best gin", for infantile colic or sleeplessness.

MODERATION NOT A MATTER OF EDUCATION

A fallacious argument or proposition that comes to the front row now and then is that moderate drinking is a matter of education.

Bring up a child in the way he should go, and he will not depart from it; that is, teach him to drink moderately and he will not drink to excess. But taste may be developed and repugnance overcome by persistency,—the distasteful may become tasteful.

All drug habits are accretive and progressive and take time in their formation, and have their own laws and conditions which we cannot change by any amount of sophistry or false logic. To educate a child not to use alcoholic beverages at all, from what we know in the light of modern science and common sense, is far more desirable than to teach him to use it. It may be we cannot do as our fathers did. It may be that their moderate use of alcoholic beverages has weakened our resistance to their baleful influence.

In a study of 600 cases that came under my supervision, in which I made a study of the family history, none escaped the record of antecedent degeneracy, from various forms of narcomania, nervous disease, consumption, and other conditions of alcoholic degeneration, evidence enough to demonstrate the relative sequence between drinking parents and a drunken posterity.

WHY USE ALCOHOLIC BEVERAGES

Why should we use alcoholic beverages at all? Is there any rational basis for their use? In the words of Professor Dr. A. Gourget, "There is no such thing as a healthy beverage containing alcohol," and the doctor is a native and resident of a wine-drinking country. The effects of as small a quantity as two drachms of alcohol can be measured

in its narcotic and depressing effects on the nervous system. A glass or so of beer or a moderate amount of wine drunk at a public dinner will so unloose the tongue and destroy the sense of propriety and environment that the after dinner stories are often bizarre and often on the verge of indecency, if not positively so, attesting the old adage, when the "wine is in the wit is out", and all this within the limit of apparent sobriety or so-called moderation.

FOR EXAMPLE'S SAKE

The conscientious moderate drinker should be moved to this consideration, "How many, by my silent example and influence, have become immoderate drinkers?" John B. Gough was by invitation at a dinner party. The hostess asked him to take wine. He politely refused. She exclaimed with sarcasm, "Why, Mr. Gough, I suppose you would refuse cheese, perhaps, if offered to you." "Yes, madam," he replied in effect, "I would refuse cheese, if cheese caused homicides and suicides and wrecked homes, and caused sorrow and sighing,—I would refuse even cheese."

A doctor and a bishop sat side by side at a dinner. The bishop sipped his wine, but the doctor turned down his glass. The bishop, observing this act, said, "Doctor, do you not

like wine?" "Yes," said the doctor, "I do." "Then why do you turn down your glass?" "For example's sake," was the reply.

The example of the respectable moderate drinker on the young and the thoughtless and inexperienced is far more serious and wide-reaching than the exaggerated forms of drunkenness or than the "terrible example" that presents the victim of the liquor habit in all its hideous aspect and deformity, for he presents the habit in the garb of respectability, safety and even healthfulness.

Let us, therefore, as physicians, teachers, temperance reformers, and those who have the best interests of their country and the world at heart, not temporize or compromise with the question of so-called moderate or temperate drinking. Let us plant our standard of reform on the line of advanced thought and high morality and bring the people out of the dark valleys of ignorance and unsanitary conditions to the uplands, acquired through scientific research, sound reason, practical experience, and common sense. Let this be our inspiration:

"TOTAL ABSTINENCE, no surrender, no qualification, no compromise, for we stand on moral and scientific grounds, in the interests of our common humanity."

RACE PERPETUITY

From an address by Prof. Gruber, President of the Royal Hygienic Institute of Munich.

ALCOHOLISM is as rife in Germany today as ever. If the brandy pest has abated, the immoderate use of beer has correspondingly advanced. In 1905 the per capita consumption of beer was 119 litres (quarts) besides wine and whiskey, equivalent to 9.6 litres of absolute alcohol. The burden imposed by alcohol far exceeds all others. The misery that it entails is horrible and justifies the most strenuous efforts to combat it.

Germany stands today outwardly strong but will she remain so? Struggle is the nature of all good. Nothing is so dangerous to a people as power and culture. The fall from eminence into corruption and death is so frequent in the life of nations that many scholars believe that culture destroys men. Whoever immortalizes himself in deeds, becomes extinct in his children. That has been the destiny of all dynasties.

The scientist knows how universally this phenomena occurs. No family of Roman patricians outlived the second century; none of the new Roman nobility the third. The same has been true of the German nobility.

Such knowledge is very disquieting because even now all the old families are extinct. If Berlin, for example, grows, it grows from outside accretions; its prolificness is falling off. Extinction comes from the diminution of child births. This is partly voluntary and partly natural. Where it is involuntary it is a sign of degeneracy, sometimes the only sign, but usually one of many. Whole nations often become extinct through such unfruitfulness, for example, the Greek.

Numberless are the old generations that have worked and worked and begotten children and died. The people became more and more cultivated until the generation arrived which became conscious of its dormant force and began to be immoderate in its work and pleasure. That is the turning point in the life of a people. The sons became less fond of work, and more fond of pleasure than their fathers. The regularity of the regenerative life is destroyed and then the course of the nation is rapidly downward. With an infinite refinement of culture comes an unrestrained egoism, and less motive in living because of excessive exhaustion. The ability

to make sacrifices falls away. Men live only in the present, sensibilities become effeminate.

This history of the ancient nations is coming to be repeated more and more in our present time. All live only in the present and renounce the future generations. One asks with dismay whether this can be a part of the normal plan, or whether there is a means of prevention.

Many scientists have looked for the cause of unfruitfulness in the excessive development of the brain. But the regenerative life declines in other families where there is no excessive brain development, and the decline comes on suddenly, showing the entrance of some new influence.

A second reason given by those who search for the cause of the unfruitfulness in strenuous mental work, is the unhygienic life of the brain worker. But that cannot be the cause, for extinction has taken place in old families that were always hunting and fighting.

The explanation is to be looked for, therefore, only in the entrance of some poison, and this poison is easy to find. It is alcohol. It is well known that the damage done by alco-

hol reaches far beyond the drinker, deep into the ranks of those who are temperate. It extends to the drinker's descendants. It seems possible, therefore, to check this race degeneracy. Alcoholism is, indeed, only one of the childhood diseases of the race; but childhood diseases are frequently fatal. We must bestir ourselves for the danger is greater than ever. The number of the insane has nearly doubled in the last four years.

The requirements of the present time put a greater strain upon mental activity than those of any previous epoch. The tasks imposed become almost too much for the greatest intellects. And in this situation we continuously poison our noblest organ. When men do this in matters of life and death it bespeaks inexcusable recklessness.

Only that race which can excel in obedience, temperance, and labor, can remain vigorous and maintain the vigor of the posterity. The magic word which comprises all is "discipline."

Who trifles with life will fail in the end;
Who rules not himself, unto others must bend.

PREMATURE DEATH DUE TO ALCOHOLISM

DR. RUDOLPH PFISTER begins an article in *Virchow's Archiv* (1908) with these words:

"The number of individuals in civilized countries who die of old age is so small that it has become customary to designate as 'causes of death' the external circumstances or pathological changes which end life. These ought rather to be called 'the causes of premature death.'"

The purpose of the article is to show the part which alcoholism plays in causing these premature deaths. The city of Basle, Switzerland, was chosen as the locality for investigation, because there the attention of physicians has for some time been turned to drink as a cause of mortality. As early as 1878 the part which alcohol played either as a sole or contributing cause is given in the statistical reports. The period covered by Dr. Pfister's investigations extends from 1892 to

1906. In Basle, as in other places, the number of deaths among men greatly exceed that among women. Moebius in his work, "Sex and Disease", gives it as his opinion that but for alcoholism and venereal diseases men would have less sickness and live longer than women. The influence of venereal disease is very small in Basle, quite the opposite of the other factor.

During the years 1892 to 1906 alcoholism played a part in 11.5 per cent. of all deaths in men between 30 and 40 years of age; in 18.1 per cent. in ages from 40 to 50; in 14.2 per cent. in ages from 50 to 60, making an average of 10.5 per cent. for all ages between 20 and 80 years of age.

The result therefore justifies the statement previously made from the well kept statistics of that city, that in Basle, every tenth man dies of alcoholism.

Dr. Pfister ascertained for each of the

DISEASES AND PERCENTAGE OF ALCOHOLISM.

Age Period	Digestive Organs	Liver Cirrhosis	Pneumonia	Circulatory System	Kidney Disease	Suicide
30-40	20 per cent	100 per cent	22 per cent	17.5 per cent	20 per cent	18 per cent
40-50	43 per cent	91 per cent	30 per cent	23.7 per cent	25 per cent	26 per cent
50-60	39 per cent	85 per cent	19 per cent	14.4 per cent	10.2 per cent	13 per cent
60-70		57 per cent				19 per cent
70-80						27 per cent

common diseases separately, the percentage of deaths in which alcohol was a factor.

The high percentage of cases in which alcoholism was combined with liver cirrhosis as shown in the above table, certainly justifies the opinion that drink is a common cause of this disease. Most of the deaths tabulated under diseases of the circulatory system were caused by degeneration of the heart muscles, enlargement, and failure of that organ.

A further computation shows the average percentage of deaths due to the combined effects of drink in the various diseases or circumstances causing death. These are as follows.

Digestive Organs,	43.7 per cent
Pneumonia,	30 per cent
Circulatory System,	23.7 per cent
Kidney Disease,	25 per cent
Suicide,	26 per cent
Accident,	21 per cent

It cannot be charged that the figures obtained by Dr. Pfister are an overstatement. On the contrary, they show far less than the

actual proportion. They tell nothing of the injuries which the drinker inflicts upon others through the accidents he causes, as in railroad service especially, or the degeneracy he transmits to his descendants.

Pfister calls attention to the infant mortality, three-fourth of which is due to trouble with the digestive organs, and refers to the statistics of Prof. Bunge showing that the inability of women to nurse their children is a specific form of alcoholic degeneration, and to the connection between this and the high death-rate of infants under one year of age.

The most impressive fact brought out by this investigation is the destructive effect of alcohol upon the men in the most efficient period of life—from 40 to 50. Nearly one-fifth (18 per cent.) of all those who die during this time of life are victims of alcoholic habits which contributed to their untimely end. Another important point brought out is the value of exact records by physicians in estimating the mortality due to alcohol.

THE DANGERS IN THE USE OF BEER

By Hugo Hoppe, Nerve Specialist, Königsberg, Germany

[Continued from the November JOURNAL]

A CLASS of troubles which are not, like the foregoing, generally designated as alcoholic diseases, are very frequent among beer-drinkers.

HEART DIFFICULTIES IN BEER COUNTRIES

First among these is expansion and enlargement of the *heart*, or "beer heart," as it is called in Munich where this disease was first attributed, by Professors Bauer and Bollinger, to the large amount of beer there used. In the 5,700 autopsies held in the Pathological Institute of Munich from 1885 to 1895, it was found that the cause of death in 244 cases was beer heart. Among these were only 26 women, showing, Bollinger thought, the best proof that a temperate life, such as women usually live, is a protection from this disease, while a sixteenth part of the men had drunk themselves to death with beer.

In Munich, the death-rate from heart disease is higher than elsewhere. According to the statistics of the Gotham Life Insurance Company, the general death-rate from heart disease elsewhere is 5.6, while in Munich it is given by Sendtner as 11.9, nearly double.

Among those engaged in the beer industry, the death-rate from heart disease is considerably higher than it is among the general population of Munich.

In the Bavarian army during the years

1882-1893 from 3.1 to 6.8 per cent. of all the patients received into the hospital suffered from heart disease, while in the Prussian army only 1.1 to 3 per cent. of the hospital patients were thus afflicted, not quite half as many. . . . Thus the rate of beer consumption in Bavaria is marked by a preponderance of heart disease.

In North Germany, also, the injurious result of the increasing use of beer is shown by an advance in heart disease. Prof. Fraentzel reported in an article on heart disease, in 1898, that in Berlin, where the drinking of beer, especially of the heavy beer imported from Bavaria, has enormously increased, he had to treat during the preceding few years a steadily rising number of cases of palpitation, shortness of breath, and other indications of heart trouble occurring in comparatively young people between twenty and thirty years of age in whom examination revealed enlargement of the heart. The only cause found for the trouble was the habitual free use of beer, the withdrawal of which was followed by improvement.

In the Prussian army also, heart disease has increased from 1.5 per thousand in 1881-1887, to 14.4 in the year 1898.

KIDNEY DISEASE

Kidney disease is frequently found in con-



nection with enlargement of the heart. Again, it is in Munich that the expression "beer kidney" first came into use, because it was found there with particular frequency in beer-drinkers. The great quantities of alcohol, even though in diluted form, that must pass out through the kidneys, irritate the cells and tissues of these organs and lead ultimately to chronic inflammation.

While acute inflammation of the kidneys can be brought about, as observations have shown, by single immoderate indulgences in beer, chronic inflammation followed by contraction is more a disease of the steady drinker. The beer drinker who is not at all a drunkard in the popular sense, is very frequently the victim of chronic inflammation of the kidneys.

In Bavaria, from one-third to one-half of all kidney diseases can be attributed to the inordinate use of beer. Those engaged in the alcohol industry are, of course, specially endangered. Placing the death-rate from kidney diseases in all classes of occupations, from the age of 25 to 65 at 100, that of beer brewers in England and Wales from 1890 to 1892 amounts to 190, and that of hotel keepers to 200. In women, chronic inflammation of the

kidney is relatively infrequent. If one hears that a man is a victim of, or has died from chronic disease of the kidneys, in the best years of his life, one may safely conclude that he had been a great friend of beer.

The *liver* is the third vital organ that is often affected sympathetically in beer-drinkers. And while, as already said, cirrhosis of the liver is not so frequent, an enlarged and fatty condition marked by a dull pain in the region of the organ often follows from the habitual use of beer. The death-rate from liver diseases among beer brewers in England is more than double (210 per cent.) that in all other callings.

RELATION OF BEER TO APOPLEXY

Like all other alcohol users, beer drinkers are liable to serious disturbance of the *blood vessels*. The cells lining the inner walls of the arteries grow fatty and die, the walls thicken and harden from deposits of lime salts, lose their elasticity and become brittle. In places there may come enlargements which finally burst, causing hemorrhage, a condition that is particularly dangerous when it occurs in the brain and may cause sudden death by apoplexy.

In most victims of apoplexy occurring in the middle years of life, indications of chronic alcoholism, are more or less pronounced. Usually, when a man succumbs to his fate during or after a drinking bout, often in the beer-house, the scene of his hilarious carousals, no instructive and lasting impression is made by his sudden death upon his astonished and frightened companions, for the cause is looked for in everything else except in beer.

DIGESTIVE AND NERVOUS AFFECTIONS

Among the less dangerous diseases which occur frequently in beer-drinkers are affections of the *alimentary canal*. Beer-drinkers have a marked tendency to dilatation (enlargement) of the stomach, and to chronic diarrhea.

I will mention here only briefly inflammation of the *nerves* which occurs not only in brandy-drinkers, but also in beer-drinkers, is first announced by "rheumatic" shooting pains in the legs, in severe cases leads sometimes to paralysis. In addition to this, the beer-drinker frequently suffers from neurasthenia—irritable weakness of the nervous system which has increased so enormously in the last few years.—*Translated for THE SCHOOL PHYSIOLOGY JOURNAL.*

THE AGE IN WHICH WE LIVE

From an address by Prof. Curran Pope, Louisville, Kentucky

THINK of the fact that state upon state, with numerous and large hospitals for the insane, is crowded to the gates with patients, and that applicants are being refused, and you will gain some idea of what it means to the mental status of the people of this country. Pessimism is not a part of my nature, but I look with dread akin to terror upon the steady growth of nervously degenerated and breaking down human beings, and wonder what will be the future's heritage.

Alcohol, morphine, and allied drugs have marvellously increased in their consumption, and this is but a sign-post indicating the trend of the nation. When we stop to consider how many weak, unstable, and erratic people there are in this world, we gain some idea of the danger of the acquirement of these habits by even the medicinal prescription of the physician, and it behooves him on his part to consider the ravages that are being made into the nerve force of the nation when he glibly prescribes alcohol in any form or administers a single hypodermic.

From time immemorial men have asked the question, "Can sorrow from the goblet flow?" Each and every human being possesses an innate desire to escape suffering and

discomfort, the wear and tear, the turmoil and upsetting of this life; a desire to seek pleasure and happiness even if it be purchased at the price of destruction. These drugs—for alcohol should be so classed—drown, obtund, and shut off all the highest and most beautiful of the mental faculties, those that raise man as high above the brute creation as his Maker is above him.

With the loss of these controlling factors of brain—moral degradation—physical ruin is but a short step, and this, alas! is not limited to the individual, but affects his nation, and his civilization. No one who has had as intimate an opportunity as myself to see the depths to which these narcotics and anesthetics may bring an individual and his family, and on the other hand, the glorious joy and bright happiness that comes from temperance and temperate living, can but believe that total and absolute abstinence is the only hope for the unstable ones, and, in fact, the best prescription for the stable ones.

Let us pause for a moment and ask the question as to whether this is a vice on the part of the individual or is it the resultant of certain factors acting upon an already high-strung nervous organization? I am satisfied that we should regard addiction to alcohol as a disease and not a vice, a peculiar state of the nervous organization which, keyed to the highest pitch, seeks in the consumption of these drugs a sedative, relaxing, and quieting influence to relieve the intense tension under which we work. Thus they in their turn prove but one link in the vicious chain or cycle that is influencing and modifying the whole age in which we live. It were against common sense and the laws of God and man to believe that from such parentage healthy and strong children could spring, those who would be an honor to their state and their country; and thus the weakened individual and victim carries his unfortunate curse into unborn generations.

THE NEW YEAR'S OUTLOOK

BY E. L. TRANSEAU

THE predominant note in medical and social science today is "Preventive Medicine" or the "Call to Health" as one physiologist names it. The movement for a national Department or Bureau of Hygiene, started two years ago by the Public Health Defense League, has been taken up by the American Association for the Advancement of Science by the American Medical Association, and it is being warmly advocated in numerous medical journals. The *Boston Med-*

ical and Surgical Journal says: "One accustomed to observe the trend of affairs at the present time must have noted how imperatively the subject of the public health has been demanding recognition. The medical profession is now recognizing its responsibility to educate the laity in the principles of disease prevention."

A physician says, "The sanitary movements of the present time are answering the question 'Am I my brother's keeper?' and the answer is, 'yes'."

Arthur McDonald, Washington, D. C., is urging Congress to establish laboratories under city, federal, and state control, and also under private endowment, for the study of the criminal, pauper, defective, and other abnormal classes, with a view to lessening these social evils by investigations of their causes. He says, "Governments pay out millions to catch, try, and care for criminals, but give very little study to the causes that lead to crime."

The same subject is being discussed in England. Sir Clifford Allbutt in an address delivered at Manchester, last October, urged the establishment of a general staff of medicine and inveighed against "mopping up effects in disregard of causes."

In a notable address before the New York Academy of Medicine last year, a physician urged the movement for improving the public health by recounting the annual loss of 160,000 lives from tuberculosis, 28,000 from typhoid fever, 125,000 from pneumonia, 60,000 from cancer, and 15,000 from influenza, most of which could be prevented if people only understood the causes and were warned of the dangers.

Nothing could be more favorable for the temperance movement than this hygienic uprising. Such a general, thorough, unprejudiced study of the causes of ill health and disease will at once reveal here, as it is doing in European countries, how much alcoholic indulgence contributes to the fatality of many diseases. Switzerland has made such an investigation (See p. 67) and France is preparing to obtain the necessary statistics. In most countries, however, our own included, no exact records are obtained from physicians to show the extent to which alcohol is a contributing factor in the diseases that are put down as "causes of death".

If those are right who think the cure for intemperance is the moderate use of beer or wine, then the percentage of diseases due to alcoholism in Switzerland, a wine producing country, ought not to be higher than in ours. A recent investigation there showed alcohol

to be a contributing factor in an average of 27.9 per cent. of the deaths from the ordinary diseases.

The rapid growth of the anti-alcohol movement in Europe, Germany, and Switzerland particularly, is due chiefly to the aid given it by prominent scientists. But there, as in this country, the pioneers have had to endure scientific martyrdom. There have been occasions in which it has seemed that the medical profession was really a stumbling block to the temperance reform, but the following editorial from the *New York Medical Record* puts the matter in a different light.

It says, "The profession is often intolerant of novelty, even cruelly so, and men have died of broken hearts in consequence of the ridicule heaped upon them by their fellows for their advocacy of theories which are now taught as axioms in every medical school in the world. . . . The mind of the profession must of necessity be conservative and illiberal, and it is well that it is so. However much injustice it may work in individual cases, the science of medicine profits in the end through this opposition to innovations. In the long run truth prevails, but it must prove first that it is truth. If a man with a new idea is given the opportunity to lay his idea before the profession it is all that he can ask; he will have a united profession against him and it may overwhelm him for a time; it will prove his theory and will prove him, and if either rings false, it will be cast aside; if both are true, one at least will in the end prevail; the man may go down, but the truth he proclaimed will live and become an integral part of medical science. If the truth lives what matters it to science that its discoverer perishes? Science is impersonal and cares naught for the individual".

Many statements now appearing in medical literature indicate that fundamental truths concerning alcohol which have been long contended for, are beginning to live. As an example, the *Journal of the American Medical Association*, September 12, 1908, said:

"The important features of the present movement for better sanitary conditions are ably summed up by Prof. W. T. Sedgwick in the annual address in medicine at Yale University. One or two points deserve special attention, since they are not always indicated in the popular conception of the work. Prof. Sedgwick mentions as one of the foremost responses to the 19th Century call for better living, the temperance movement, which started a century ago, and which in its various aspects has become so familiar to us that

(Continued on page 80.)

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

But men march ever on to better things,
The race inherits what the future brings;
The flaming torch of Progress lights the way.
And leads men thru the dark to meet the day.
Earth holds the joys of life in store for all,
And his just share to every man shall fall,
Whene'er the new enlightened day shall break,
And all the world in Brotherhood awake.

Owing to the illness of the editor and the absence of the assistant editor, the responsibility for this month's issue of the JOURNAL has fallen upon the contributing editor.

The second annual meeting of the Scientific Temperance Federation was held at 23 Trull street, December 8. The report of the year's work was presented and the following officers elected:—President, Rev. Clarence A. Vincent; Vice-President, Mrs. Maria H. Gordon; Recording Secretary, E. L. Transeau; Corresponding Secretary, Cora Frances Stoddard; Treasurer, Robert H. Magwood.

The sections of the report dealing with the scientific aspects of the alcohol question will be found on pages 70 and 74 of this issue.

The section dealing with the other work of the Federation for the past year will appear in the February issue.

THE LADY

IN the December *Delincator* the American painter, Mr. William M. Chase, speaking of his models, describes one whom he calls "a perfect type of American womanhood". It is interesting to note the qualities which Mr. Chase includes in his ideal of perfection. He says:

"As she arose gracefully and stood smiling

before me I knew at once that fortune had sent me the very object I had long hoped to find—a perfect type of American womanhood. A clear-cut, classic face with splendid profile, a *steadfast expression of sweetness, loveliness, womanliness—and above all else, dignity and simplicity.*"

If the sweetness, womanliness, and dignity had been lacking, the artist would not have been satisfied. The beauty which he looked for was not of form merely, it was the personality animating the form that inspired him.

What a difference it must make in the conduct of a young girl whether she holds such a type of woman as her ideal, or the type that is becoming too common for the credit of American womanhood. A pitiable instance of the effect of a false ideal was that of the young woman who said she drank wine when lunching with her fiancé not because she liked it, for she did not, but because she did not wish him to think she was "slow"!

A dozen different publications have been calling attention, during the past few months, to the rapid increase of drinking among women, not among the lower class, but among the higher class, among the social leaders. Dr. Lydston of Chicago says: "At ladies' social affairs cocktails are often served; cocktails at womens' clubs pass without comment; indeed, they are so common that the situation is often a source of embarrassment to the female teetotaler." From the other end of the social scale, a New York police matron says, "The drink habit formed in respectable life is probably responsible for the presence of more women in the Tenderloin than any other cause."

Who is there to impress upon the minds of young girls in all ranks of society the beautiful ideal of American womanhood so clearly depicted by the artist? The following incident may help to answer this question.

A lady, one who deserved the title, formed a young girls' club and for many years held the place of "next friend" to the girls. Among the members was one inclined to be hoydenish and very loud in her dress. After a time it was noticed that she was modifying both her dress and her manners until finally she became almost a second edition of the "lady" whose quiet dress and bearing had gradually impressed themselves upon that girl as ideal.

Preaching alone will not create high ideals, though words make a deep impression when a teacher or friend has won a place in a girl's heart. But the personified lady, even though she may not have beauty, if her manner and

character shine out in the "steadfast expression of sweetness, loveliness, and womanliness", will become something far higher than an artist's model, the ideal to susceptible girlhood of "a perfect lady".

If the inner history of personal influence could be written, it would show that the real lady, in the teacher's chair or in the role of friend, has often changed the current of many lives for good. There are numerous aids which such a one can use, pictures, biographical sketches, stories, heart to heart talks, all set aglow with her inner endowment of sweetness, loveliness, and womanliness until there is fashioned under her hand that most precious thing in human experience, an ideal character.

AMERICAN SCHOLARSHIP AND MORALS

A VERY fine tribute to American student life was contained in a German medical journal last year reporting an address of Dr. Frederick Muller to a medical association in Munich. He had been on a visit to this country and in describing university life here he is quoted as saying:

"Alcohol plays no part in the life of the American University. In the dining halls only water and tea are served. It must further be emphasized that among the student body stricter views in regard to morals are prevalent than at many of our universities in the large cities, or even in those of France. Still, this is no peculiarity of the universities, but it is quite commonly recognized that especially in the life of the streets, on the billboards and exhibitions, as well as in the illustrated humorous papers, everything that may be regarded as obscene is avoided. This may be due in part to stricter police regulations, but in reality it is the public itself, and especially the women, whose healthy sentiment and energetic action hinder the appearance of anything vulgar in word or picture. With this are connected the facts that venereal diseases play over there a smaller role than with us, that even in large hospitals there is no department for venereal patients, and that tabes is not so frequent as in Germany and France."

The magazine further says:

"The thorough instruction of American students in text-book and recitation drill results in better preparation for the strictly clinical work. Muller says: 'I was often astonished to see how well the American student was able to give an account of the patient assigned to him'.

"Muller does not encourage dissatisfied or ambitious German physicians in the idea that they will find an easy road to a lucrative practice in America, since the public demand for educated physicians has produced a generation of American practitioners as well educated as the German, against whom they are fully able to hold their own."

AN INVITATION TO ESTABLISH AN INTERNATIONAL UNION OF ABSTAINING TEACHERS

Sent out by Miss Gertrude Streichhan, President of the Society of German Abstaining Women Teachers, Berlin, Germany.



THE terrible harm done by the increasing use of alcoholic drink among all classes and in all countries—the great dangers to which the young people entrusted to our care are specially exposed,—the indescribable misery from which so many children are suffering in consequence of the intemperance so universally present in different classes of society,—have induced teachers, the guardians and educators of the young, to engage in a difficult struggle against the vast enemy of our people.

The Temperance movement, with good reason places its greatest hope for the victorious completion of its work, in the education given to the young, training them to live without

alcohol. We must deliver mankind from their vast foe, we must preserve them from degeneracy and ruin, and inaugurate a non-alcoholic civilization!

Some nations are nearing the goal, because this Temperance education has trained up a generation which is already getting rid of alcohol by the aid of the law; other nations, again, are still far from having attained this aim.

A Union of Teachers, both men and women, in all countries, would add strength to the movement by promoting an interchange of experience, and suggesting new methods of carrying on the conflict.

"The Temperance star rests above the schoolhouse." If a bright light is to shine upon the world, we must have a vigorous Temperance movement among the teachers of all nations, and a powerful international organization. We therefore invite abstaining teachers in all countries to unite their efforts to bring about civilization free from alcohol, for the good of the young, and the brightening of the prospects of mankind.

Abstaining Teachers will have an opportunity of meeting from the 18th to the 24th of July, 1909, in London, at the time of the 12th International Temperance Congress; we therefore propose to start an international organization at that time in London.

Preparations for this union should be at once undertaken by the different national teachers' societies; we should at once begin to study the question in our discussions, and decide upon our course of action. We ask you to send us, before the end of 1908, the result of such discussions and the resolutions adopted. We shall then, during the winter of 1908-09 draw up the draft of a constitution to be submitted to each national organization. Any country not yet possessing such a national teachers' society ought to endeavor to establish one during the present year; even if these associations are but small, they will form an indispensable basis for an international federation.

WHEN WE ARE BELIEVED IN

No man can overcome the terrible odds of thinking that no one believes in him. When any man reaches that depth, he is gone. Therefore God gives us friends, whose confidence in us is our greatest resource; and He gives us the still greater privilege of being friends and of saving and strengthening others by showing them our confidence in them.—*The Sunday School Times.*

SMILING—FROWNING.

Two boys went forth on the way of Life,
And one had a smile and one a frown;
One looked up into the heaven's blue,
While one walked, sullenly gazing down.
One made a man that men despised;
The other they praised with an eager pride.
Which do you think won the world's esteem,—
The boy who sang or the boy who sighed?

The world has plenty of care and gloom;
Plenty of bitterness, pain and guile,
It has no need of your sigh and frown.
But, lad, it is hungry to see you smile.
Don't add to the shadow upon Life's way,
But make sunshine as you pass along,
For the sad old world is a good old world
To the boy with a cheerful song.

Louis E. Thayer.

SOME OF THE YEAR'S SCIENTIFIC ACHIEVEMENTS

BY E. L. TRANSEAU

THE advance made in the scientific investigation of the alcohol question during the past year is worthy of a more careful summary than present space and time allow. The following are among the significant achievements:

The fact that in Germany about 450,000 children die annually has led to serious study of the causes of *infant mortality*. Dr. Tugendreiche says that climate, sultry heat, poverty and all conditions which are supposed to explain high infantile death-rate have little influence on breast-fed children, that only the artificially fed succumb to these influences. The figures in Berlin were 19.8 per cent. mortality in breast-fed infants to 43.2 per cent. in the bottle-fed. In view of Prof. Bunge's discovery of the relation between inherited alcoholic degeneracy and loss of the power of lactation, the conclusion of Dr. Gustav Temme naturally follows. He says, "If alcoholism could be removed it would take away one of the chief causes of infant mortality".

Recognition of the influence of alcohol upon the sick rate is changing the policy of some of the *sickness* insurance companies of Germany, leading them to forbid the use of sick funds for the purchase of alcoholic liquors. Life insurance companies in both Sweden and Norway have established separate groups for abstainers, in which they are allowed lower rates.

Prof. Thompson, of the University of Aberdeen, has contributed a book to the study of alcoholic *heredity* in which he traces the injury that drunken parents inflict upon their children, from the standpoint of the biologist.

Dr. A. T. Schofield has written on the influence of alcohol in producing *nervous disorders*. He says: "In the early days of the last century large quantities of alcoholic liquors were almost universally consumed;

and even where the alcoholic tendency is not directly apparent, its influence is still felt in the nervous equilibrium of the present generation."

Dr. Albert Wilson, in a work on "Education, Personality, and Crime" says, "Temperance work has a scientific basis in its object of race improvement; and with so much evidence on the post mortem table, of alcoholic *degeneracy*, it is difficult to explain how any medical man can sanction or justify the use of alcohol as a regular article of diet".

Dr. Schlesinger, in a thorough investigation of the prenatal influences in 138 *feebled-minded* children in Strasburg discovered drunkenness in 30 per cent. of the parents. He thinks that if he could have obtained full information in all cases, the percentage would have been higher. He found also in the children of drinkers a greater tendency to convulsions in early childhood.

Prof. Garnier in a French medical journal described the process by which small doses of alcohol taken during a long period, as in wine-drinking, give rise to *liver cirrhosis*.

Alcohol as a causative factor in *suicide* has been investigated in Königsberg and the discovery made that 20 attempts out of 57 in that city were the result of the characteristic hallucinations of chronic alcoholism.

One of the most notable original investigations reported this year was that of Dr. Henry Kesteven on the effects of alcohol upon the amoeba, in which he found that alcohol in very weak solutions did *not* act as a *stimulant* but as a depressant upon these simple animal cells; that it stopped their activity immediately, and many did not recover, while others regained their ability to move again only after a number of hours.

The similarity of the amoeba to the white blood corpuscles, and the affirmation by Prof. Metchnikoff that alcohol also checks the activity of those defenders of the body against disease germs and thereby lowers the normal power of *resistance*, causes physicians to pause in the administration of alcohol to patients suffering with infectious diseases. Dr. Townsend, in the *Boston Medical and Surgical Journal* shows how doctors are often constrained by the beliefs of patients or their friends to prescribe alcohol when they otherwise would not—a condition showing the need of a more widely disseminated knowledge of the nature of alcohol.

Dr. G. Rosenfeld of Breslau has published a book in which he considers the *medical use* of alcohol entirely apart from its injurious

effects when used as a beverage. He is reported to have shown that no advantage is to be expected from the administration of alcohol in infectious diseases, that in such cases where the strength of the organism is greatly taxed it is to be strictly avoided. In heart disease alcohol is to be forbidden; also in diseases of the alimentary canal. That the temporary feeling of comfort produced is entirely due to its narcotic effect. It is contra-indicated in diseases of the liver, also in diabetes.

The result of the book would seem to correspond very well with the following opinion expressed by Dr. S. Harnberger in the N. Y. *Medical Record*, Nov., 1907. "Alcohol is good for a well man to get sick on but bad for a sick man to get well on".

The German abstaining physicians have published a number of pamphlets pointing out the duty of *physicians* to consider their responsibility and influence in teaching the people the danger in alcoholic indulgence.

Dr. G. M. Randall, in an article on kidney disease says, "Alcoholic beverages have no place in the dietary of a person desiring to live an efficient life."

Publications that have attracted the most attention in the United States have been Prof. Munsterberg's attempt to defend moderate drinking from the psychological standpoint, in the August *McClure's*, and Dr. Henry Smith Williams' presentation, in the October number of the same journal, of the incontestible evidence which science arrays against moderate drinking.

Notable effects of the convincing power of the scientific arguments against alcoholic beverages are also coming to light. In Germany and other parts of Europe the societies of abstinent students are steadily increasing. There are a dozen different organizations, including a total membership of over 12,000. Ten of the organizations publish journals. An abstract from the *Baltimore American*, quoted in the organ of the Church Temperance Society, December, 1908, says that the revolting guzzling once so common in German universities is no longer encouraged, and it credits a gentlemen of St. Louis as saying, "While a good many students still use beer, a goodly number are teetotalers and the wholes **FOR SALE** swilling of the old days has gone."

A crowning illustration of the power of scientific truths to produce conviction is the late statement of President Eliot that "the recent researches in physiology and medicine tend very strongly to show that the moderate drinking of alcohol is inexpedient."



Primary Lessons

THIRD YEAR

BEER

THE child can be kept from bad habits only by helping him to form good ones. He will be saved from wrong notions regarding drink only by giving him correct ideas before he has learned to touch or taste it.

Where there is one boy in the primary grades who has never been offered a glass of cider or home-made beer, or a cigaret, there are many who have thus early been tempted. This is the overwhelming argument for the introduction of temperance lessons into the very earliest grades, and it is always in force.

After giving a lesson on grains, and emphasizing the useful qualities of these food plants, the next step is to show how these are perverted and lost when grain is made into beer.

SUGGESTIONS FOR DEVELOPING

Distribute specimens of barley and let pupils chew and discover that at first it is like starch but after a little it begins to taste sweet. Explain that in chewing it the starch changes to sugar.

Get a package of dry "root beer", the kind that is offered for sale by druggists and grocers and that gives directions for preparation by the use of yeast and water. Do not prepare the "beer" but explain to the children that the mixture prepared according to these directions would contain the same materials as sweet fruit-juice or barley liquid, that by putting in yeast we should start the same process of turning sugar into alcohol and gas, and that the "root beer" thus obtained is an alcoholic drink.

Explain the difference between alcoholic drinks and the soda waters that are made foamy by charging them with gas. The latter can do us harm if we take too much of them; but there is nothing in them that makes us want more and more of them. We can "take them or leave them alone", for they do not

weaken our wills and at the same time create a craving for more. The danger in alcoholic drinks is that by the time the drinker finds that they are hurting him he has such a craving for them that he cannot resist taking them.

Obtain from the children two lists of drinks to be written on the blackboard, the teacher making suggestions where necessary.

WHOLESOME DRINKS

Water. (Caution about boiling, if it is liable to be contaminated). Lemonade. Soda waters (occasionally). Unfermented fruit juices. (Call attention to the bottled grape-juice now obtainable everywhere. Caution against letting it stand after it is opened long enough to ferment. The fact that grape juice may be preserved at home, as fruit is canned, by boiling and sealing air-tight, while hot, may also be mentioned, especially in grape-growing sections. But the caution against fermentation, and the appearance of a liquid undergoing it should be clearly impressed.)

DANGEROUS DRINKS

Cider. Wine. Beer. Root beer. Ale. Porter. Whiskey. Gin. Brandy. Jamaica ginger or any drink that contains alcohol. Coca-Cola. (This drink does not contain alcohol, but it is a narcotic and so capable of injuring the nerves.)

STORIES

An American printer by the name of Franklin worked in an English printing room. The English typesetters laughed at Franklin because his drink was always water. They said, "You should drink ale. Ale will make you strong."

Franklin said, "Let's see who is strongest", and he took up two heavy forms of type, one in each hand, and carried them down stairs. None of the others could carry more than one. Their ale had not made them as strong as they thought.

Once a mother brought her little sick child to the doctor. The doctor saw that the child was very ill. "What have you been giving her?" he asked. The mother replied, "She has always been a very delicate child. I used to give her gin with her milk to strengthen her. Now she has no appetite, she only eats the least little bit, and I have to give her gin to keep her alive".

The doctor was sorry for the ignorance of the poor woman, but he told her plainly that she was killing her child with gin, and her only hope of saving its life was never to give it any more gin or any other alcoholic liquor.

WHY WARN AGAINST BEER?

BY EDITH M. WILLS

WE can not too earnestly urge upon teachers and parents the necessity of frequent and positive warnings against the use of beer, for there can be no doubt that of all alcoholic drinks, it constitutes the most insidious and dangerous temptation to children and youths.

Experience and the diffusion of knowledge concerning the effects of the stronger alcohol-

ic liquors have brought us to the point where few champion the beverage use of whiskey and the like, consequently there is comparatively little temptation to the young to drink these liquors, but the case is very different with beer, and in rural communities with cider and wine.

Old fallacies as to their comparative harmlessness persist. During the past few years, millions of immigrants have brought old-world drinking customs to our shores, and billboards, newspapers and circulars have iterated and reiterated the brewers' statements that beer (or ale or porter) is a food as truly as milk and breakfast cereals, that it gives strength, is a pure temperance drink, healthful and harmless, and will not lead to drunkenness but will discourage the use of stronger liquors.

Accordingly, in thousands of homes, children see it on the tables, and drink it at their parents' behest to make them grow well. Youths who would not think of entering a saloon and drinking strong liquors are persuaded to drink harmless (?) beer, and their scruples against drinking are gradually removed as they see some sort of pleasure and sociability in its use, while they do not see far enough to discover the present evil effects and the insidious growth of habit. Thus their future earning capability is often mortgaged to the brewer, the tone of health and morals is lowered, and they are gradually engulfed in the irresistible maelstrom of narcotic habit.

Moreover, many text-books speak of alcohol as such, without sufficiently emphasizing the fact that alcohol usually appears in the form of beer and other lighter alcoholic beverages and children who may never have seen absolute alcohol, or have known that it is ever drunk, often fail to get forceful and clear-cut ideas of the identity of the poison alcohol mentioned in their books with the beer which seems harmless or even good. Hence they must thoroughly understand that within the beer is alcohol, the same and just as poisonous according to amount as clear alcohol.

'Here a line and there a line' over and over again must these facts be emphasized. Shall we be less persistent in saving our boys and girls than the brewers are to ruin them?

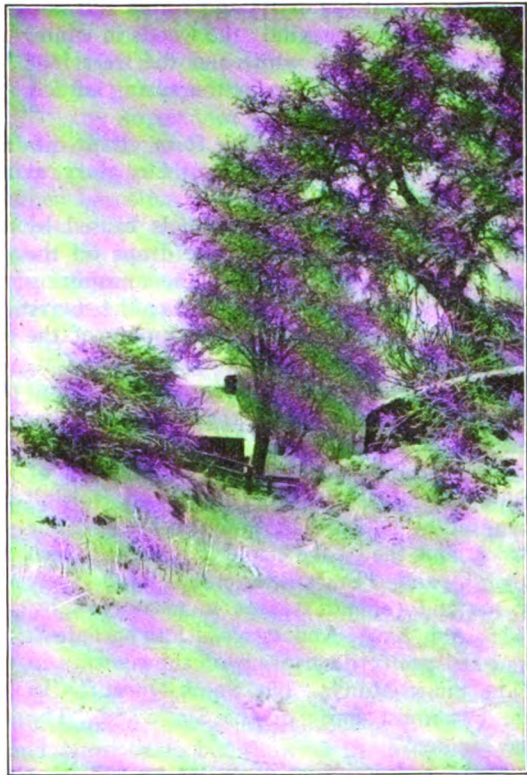
Alcohol is a poison, that is, a substance which if taken into the body tends to injure health or to destroy life.

Beer is not a food because the greater part of the original food substances of the barley have been changed to the poison alcohol. Compare the food value of milk and cereals with the tiny amount of alcohol-poisoned food in beer.

Beer cannot give strength because alcoholic drinks tend to decrease the power of the muscles. The best athletes do not use such drinks and nearly all refuse them when in training.

Beer is neither a healthful nor a harmless drink because, when used habitually, it frequently injures the heart and other organs of the body and renders the mind less keen and alert for the exacting demands of the successful life.

Beer is not a safe drink because the alcohol which it contains has the power to form a craving which may become uncontrollable.



THE BEAUTY OF WATER

WE have learned that water is useful. It is also beautiful. Seeing and feeling the beauty of things is almost as valuable as knowing their use. Keep your eyes ever open for the beautiful sights produced in nature by the different forms of water.

Watch a brook at different seasons of the year, or any body of water that may be near you. Look for water sparkling in the sunlight and the moonlight; reflections of trees and sky in the water; water roughened by the wind or by falling over rocks; spray in

the sunlight; dew-drops and raindrops on the grass and the leaves.

Notice in winter the solid forms of water and their rare beauty. Place in a mixture of salt and ice a small bottle containing water. Watch the water as it freezes and notice the graceful leaves and slender pencils that form first at the sides of the bottle. Examine snow crystals. Have they different forms? How many points are there on each crystal? Notice the frost on the grass and the trees, sparkling like millions of gems; the beautiful scenes on the windows traced by Jack Frost; the sunlight on icicles; the whiteness of the fields and the trees after a snowstorm, and the drifts and waves and hollows formed by the wind; the woods in winter when the ground is white and the trees look black; the breaking up in the spring of ice-bound streams.

Notice the clouds as they form; their different shapes; their colors; their glory at sunrise and sunset.

Listen for the different sounds caused by the water—the tapping of the drops on the roof and the window-panes; the murmuring and the chattering of the brooks; the merry tinkling of falling water; the lapping of the waves; the roar of the surf. Read "The Cataract of Lodore" by Southey. How the author must have watched the water and listened to it.

Find poems that describe some forms of water, such as Whittier's "Frost Spirit," Longfellow's "Rain in Summer," and "The Brook and the Wave", and Bryant's "Green River", and "Snow-Shower". Read these poems and commit stanzas to memory.

If you have Andersen's "Fairy Tales", read the pretty description of snow scenes in "The Snow Man", "The Snow Queen," "In the Uttermost Parts of the Sea", and "The Ice Maiden".

Write a description of water as you have seen it in spring, summer, or fall.

Write a description of water as you have seen it in winter.

Write a description of clouds that you have seen.

Copy a favorite poem that describes one of the three forms of water.

Hallock's Some Living Things.

A very small boy was trying to lead a big St. Bernard up the road. "Where are you going to take the dog my little man?" inquired a passer-by. "I-I'm going to see where—where he wants to go first," was the breathless reply.

MENTAL HYGIENE*

A CENTRAL figure in the recent scientific total abstinence movement in Europe has been Dr. August Forel, whose 60th birthday has just been celebrated in Yvorne, Switzerland. Prof. von Bunge, who has been intimately associated with Prof. Forel in this movement, approached the alcohol question from the standpoint of physiological chemistry, in which his eminence as an author and teacher is undisputed.

Prof. Forel's study of the problem was from the standpoint of psychology, in which his standing is equally eminent. These two great scientists, combining their distinct attainments and their diversive characteristics, the one massive, the other incomparably penetrating and active, have brought the scientific considerations of the alcohol question prominently before the scholarship of the world.



DR. AUGUST FOREL

Prof. Forel has recently written a book for the general public in which he has sought to give a rational explanation of the laws of mental hygiene, based upon an intelligent

*HYGIENE OF NERVES AND MIND IN HEALTH AND DISEASE, by August Forel, M. D., formerly Professor of Psychiatry in the University of Zurich. Authorized translation from the Second German Edition by Herbert Austin Atkins, Ph. D., Professor in Western Reserve University, New York, G. P. Putnam's Sons.

understanding of the physiological processes involved. The difficulty of making such a subject easily understood by the laity, and yet scientifically accurate, may be readily comprehended. Of Prof. Forel's unusual qualifications for this task, the American translator of the German edition, Prof. Aiken, says:

"As a psychologist, especially in the fields of instinct and hypnotism, he has had a world-wide reputation; his work as professor of morbid psychology at the University of Zurich has given him abundant opportunity for the investigation and explanation of mental disease from the standpoint of the professional student, and his position as director of the Burgholzli Asylum has given him even more valuable experience as advisor to those who are, or feel themselves to be, in need of personal direction."

Prof. Forel's characteristics in both writing and speaking, of concise, vivid, masterful, and often humorous presentation of the main points of his subject, come out clearly as the reader follows him through the sometimes dry subjects of perception, feeling, will, judgment, memory, attention, etc.; through the anatomy of the nervous system; the relation of brain to mind; the physiology of the senses; the embryology and race history of the nervous system. Then comes a chapter on "General Conceptions of Mental and Nervous Pathology", and one entitled a "Synopsis of Mental and Nervous Diseases or Abnormalities", followed by the practical study of "Causes of Mental and Nervous Disturbances" and "Nervous Hygiene". The latter is treated particularly under three life periods, pre-natal, childhood and adult.

In a final summary under "Requirements for Public or Social Nerve Hygiene", occurs the following paragraph:—

"The alcoholizing and degeneration of society caused by our drinking customs should be combated by a progressive promotion of total abstinence. Experience has shown that the most effective measure is local option, by which an electoral majority of the adult men and women of a community has the right to prohibit the sale of alcoholic beverages within its boundaries; further, the forbidding of the sale of spirituous liquors on Sundays and holidays and late in the evening, and the restriction of the number of saloons. Moreover anti-alcoholic instruction should be introduced in all the schools, temperance restaurants should be established as generally as possible, alcoholic drinks as a means of enjoyment should be removed from all state and municipal buildings, and temperance societies should be energetically sup-

ported in their work and development.

"In the same way and with the same energy the introduction of other narcotics, which are injurious to individuals and society at large, must be combated so far as they are used merely as means of enjoyment, especially opium, morphia, Indian hemp, ether, and cocaine. We should also combat the tobacco habit, although tobacco is relatively harmless as compared with these other poisons".

Every teacher's library particularly, as well as every public library, should be supplied with this book.

BOOKS RECEIVED

HERE is hopeful evidence that practical teachers are beginning to appreciate the importance of proper instruction in the public schools in hygiene, physiology, and the nature and effects of alcoholic drinks and other narcotics. Outlines of topics for high schools and normal institutes will, we hope, pave the way both for better knowledge of the subject and better instruction in the primary and elementary grades.

**Normal Physiology* is intended as a *text for reviews* in high schools and institutes. The text is compactly arranged, but gives a disproportionate amount of space to anatomy. The ultimate end of instruction on this subject is healthful habits; for instance, in such important divisions as the Nervous System, the Senses, the Blood, Respiration, there are in this book no hygienic topics at all. The information as to the origin of the various alcoholic drinks is accurate, but the discussion of their effects should be made more practical. Perhaps unintentionally the author "straddles" the question of alcohol as a stimulant, heading his chapter "Stimulants and Narcotics", but showing in the text that the so-called stimulating action is but temporary.

***Nowlin's Outline Study of Physiology* meets this issue squarely and has a chapter entitled "Narcotics", under which are grouped alcohol, tobacco, opium, and others. The topical arrangement of this book cannot fail to be helpful to both teacher and pupil. Anatomy, physiology, hygiene, and practical related questions indicate a work which has grown out of classroom experience. There is a helpful section on plant physiology. Blank

*NORMAL PHYSIOLOGY, by F. W. Simonds, M. S., Topeka, Kansas, Crane & Co., 50 cents post-paid.

**OUTLINE OF SCHOOL PHYSIOLOGY, by Clifford H. Nowlin, Kansas City, Mo., W. J. & H. H. Brent.

pages for notes and diagrams are a good feature.

**The Normal Institute Course of Study of Kansas* announces as its viewpoint, "The Supreme Value of Health", based upon the indispensable foundations of anatomy and physiology. Outlines for twenty lessons on subject matter and methods of teaching are offered.

Teachers will probably place varying estimates upon the value of these outlines, but all undoubtedly present points of helpfulness. All, too, quote as authorities one or more books which by reason of age or inaccuracy of statement are of more than doubtful value.

***Some Living Things* is a book of primary lessons in animal and human physiology, written by a teacher of pedagogical training and experience who knows how to secure the interest of children and mould their opinions. Among the aims which have guided the author are: "To relate the lessons on structure and work to healthful living by discovering and emphasizing the right use of the various parts of the body and the conditions under which they do their best work"; to approach "from the right and bright side wherever possible, all questions relating to morals"; "to train pupils not only to see what is right but to practice it".

These aims are well carried out. Those who are familiar with the home conditions of many little children, in which the use of beer and wine is as much a fault to be corrected as uncleanness and foul air, may perhaps regret that the "temperance teaching" should not have been more fully combined with the other hygiene instead of appearing chiefly as a final chapter entitled "Miscellaneous".

Warnings against tobacco appear quite fully in the body of the book, where there are some against alcohol. With the exception of one or two slips in speaking of the use of alcohol "to excess", the teaching on that subject is, as the author evidently intended it to be, from the total abstinence standpoint.

****Brain Roofs and Porticos* is a condensed presentation of the best ideas on the subject of phrenology, devoted chiefly to "The Temperaments", illustrated with photographs of well known people and of children showing what the author believes to be indications of types of temperaments.

***COURSE OF STUDY FOR NORMAL INSTITUTES.** Topeka, Kansas, Crane & Co. Paper 15 cents, cloth 20 cents.

****SOME LIVING THINGS,** by Ella B. Hallock, New York, A. S. Barnes & Co., 45 cents postpaid.

*****BRAIN ROOFS AND PORTICOS,** by Jessie Allen Fowler, New York. Fowler & Wells Co. \$1.00 net.

THE NEW YEAR'S OUTLOOK

(Continued from page 71.)

we are liable to overlook its sanitary importance. When one considers in detail the reaction of alcoholic indulgence to disease, the number and important ailments of which it is the direct cause, to say nothing of the indirect influence on human misery and degeneracy, one can hardly avoid realizing that it stands almost if not altogether, in the first rank of the enemies to be combated in the battle for health".

To this the *Journal of the American Medical Association* adds:

"In the public mind, however, the sanitary bearings of the subject are hardly considered and it is satisfactory to have them thus emphasized by Prof. Sedgwick. The temperance or prohibition agitator has always urged the salvation of the body as well as the soul; the conservation of family life threatened with ruin by drink; the social significance and the economic importance of temperance and even abstinence as regards alcohol. Any great general movement for sanitary reform which ignores the evils which arise from the use of narcotics leaves a vast gap in the line against the common enemy...

The medical profession as a body should stand for temperance as one great essential of public health. That there has been too much neglect in the past is all the more reason why the profession should do its duty now and in the future."

The outlook seems hopeful, therefore, for speedy aid from the American medical profession in investigating the sickness, crime and misery due to alcohol. That they are equally prepared to recognize the full danger in the habit forming power of alcohol and its weakening effect upon the will, even in small amounts is not yet so apparent. The decisive battle for these truths is yet to be fought and the indications are that it will be fought very soon.

In the plea of Prof. Munsterberg for the moderate use of beer and wine as a method of stopping intemperance, the pro-alcohol side has an influential advocate. But he is battling against truths that will ultimately prevail. Whether the victory comes to the champions now pressing forward or to their successors will matter little to the champions, but much to those who will lose their power of control in trying to match it against alcohol.

✱
**"A Happy New Year" to Readers,
 One and All**

WHAT MATTERS MOST?

It matters little where I was born,
 Or if my parents were rich or poor;
 Whether they shrank from the cold world's
 scorn,
 Or walked in the pride of wealth secure.
 But whether I live an honest man,
 And hold my integrity firm in my clutch,
 I tell you, my brother, as plain as I can,
 It matters much!

It matters little how long I stay
 In a world of sorrow, sin and care;
 Whether in youth I am called away,
 Or live till my bones and pate are bare;
 But whether I do the best I can
 To soften the weight of adversity's touch
 On the faded cheek of my fellow-man,
 It matters much!

It matters little where be my grave,
 On the land or on the sea,
 By purling brook or 'neath stormy wave,
 It matters little or naught to me;
 But whether the Angel of Death comes down
 And marks my brow with his loving touch,
 As one that shall wear the victor's crown,
 It matters much!

—British Weekly.

A German farmer was driving across a railroad track when a train struck his wagon, killed his horses, and threw him out. In the resulting suit for damages the plaintiff was on the witness-stand, making out a good case, when the defendant's lawyer asked, "Did you take any precaution before you drove upon the track?" The witness seemed reluctant to answer, but finally stammered out, "Yah, I took yoost a leedle—yoost a couple of swallows, dat's all." This started a new line of defense, and it turned out that the "couple of swallows" were the last in a pint flask that had been full when he started. He lost his case—*Brooklyn Eagle*.

THE Gulick Hygiene Series

awakens the interest of children and produces unprecedented results in the teaching of Hygiene and Civic Reform. A child reads intelligently, absorbingly and enthusiastically whatever appeals to his interest. This appeal is something entirely new in a series of hygiene and physiology texts, and accounts in a large measure for the unusual success of these books.

GINN & COMPANY

Publishers

Boston New York Chicago London

THE KNOCKING.

"De successful man," said Uncle Eben, keeps quiet so's he kin hear opportunity knocking at the do.' De failure tries to do all de knockin' hisse'f."—*Washington Star*.

THE SUFFOLK ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

234 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

NEW SCIENTIFIC TEMPERANCE LEAFLETS

PRICE PER 100

Social Service in the Temperance Reformation	\$2.00
Important Place of Physiology in the School Curriculum	1.00
The Problem of Americanizing One Million Immigrants Yearly	.75
Scientific Temperance in the First Six School Grades	.30
International Course of Study	2.00
Alcohol as it Affects the Brain and Nerve Tissue	.75
Relation of the Drink Problem to the Perpetuity of the Nation	1.00
The Young Men and Tobacco	2.00
Why the Cigaret is Specially Harmful	1.00
The Boy and the Cigaret	3.25

Travelling Loan Exhibit

— OF —

Attractive, Anti-Alcohol

CHARTS

ENTIRELY NEW

For Pupils, Teachers, Professional
People, the General Public

EXHIBIT consists of 25 Colored Charts (framed, size 22 x 28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other Infectious Diseases, etc. (See *JOURNAL* p. 64). No objectionable details. Excellent for No-License Campaigns.

Send for Full Information as to Expense
and Plan for Use.

Scientific Temperance Federation

23 Trull St., - Boston, Massachusetts

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

Purpose, Methods, Advantages, Membership

An Educational Temperance Organization

Purpose.—To make known in every possible way, in popular form, the proven facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

Methods.—The dissemination of facts by the following and other methods: **Personal Correspondence, An Editor's Press Circular, Loan Exhibit of Scientific Charts, Popular Leaflets, The School Physiology Journal, A Stereopticon Lecture.**

Its Membership

Advantages.—All members receive free *The School Physiology Journal*, notices of useful new publications, samples of leaflets or other information published by the FEDERATION.

Associate Membership is open to all who desire (1) to have fuller acquaintance with the alcohol and narcotic question which membership in the FEDERATION affords, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance. Anyone may become an Associate Member by the payment of the annual fee of \$2.00.

THE SCIENTIFIC TEMPERANCE FEDERATION has a unique place to fill; a distinct message and work. Its aims are fundamental and practical.

Address all contributions, correspondence, inquiries, etc., to THE SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull Street, Boston, Mass.

Combination Journal==Magazine Offers

Almost any Periodical published, furnished with Journal at Reduced Rates.

Let us know what Magazines you want and will make the
PRICE RIGHT

World's Work,	\$3.00	} OUR PRICE \$3.00
Delineator,	1.00	
Altruist or Mother's Magazine	.50	
Physiology Journal . . . .	.60

Review of Reviews	\$2.00	} OUR PRICE \$2.60
Success, or any	1.00	
Class A Magazine . . . .	.60
Physiology Journal . . . .	.60

Suburban Life	\$3.00	} OUR PRICE \$3.00
Women's Home Companion	1.00	
or any Class A Magazine		
Physiology Journal, . . . .	.60

Delineator	\$1.00	} OUR PRICE \$2.00
Everybody's	1.60	
Physiology Journal . . . .	.60

TEACHER'S GROUPS.

Normal Instructor,	\$.75	} OUR PRICE \$1.00
School Physiology Journal, .	.60	

Normal Instructor,	\$.75	} OUR PRICE \$1.65
Primary Plans,	1.00	
School Physiology Journal, .	.60	

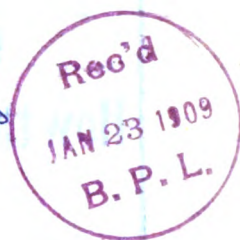
CLASS A.

Success,	\$1.00	} Any 1 with JOURNAL \$1.15
Woman's Home Companion, .	1.00	
American (Leslie's),	1.00	
Our Little Folks, (new) . . .	1.00	} Any 2 with JOURNAL \$1.80
American Motherhood, . . .	1.00	
Primary Plans,	1.00	} Any 3 with JOURNAL \$2.50
American Boy,	1.00	
Altruist, *	1.00	

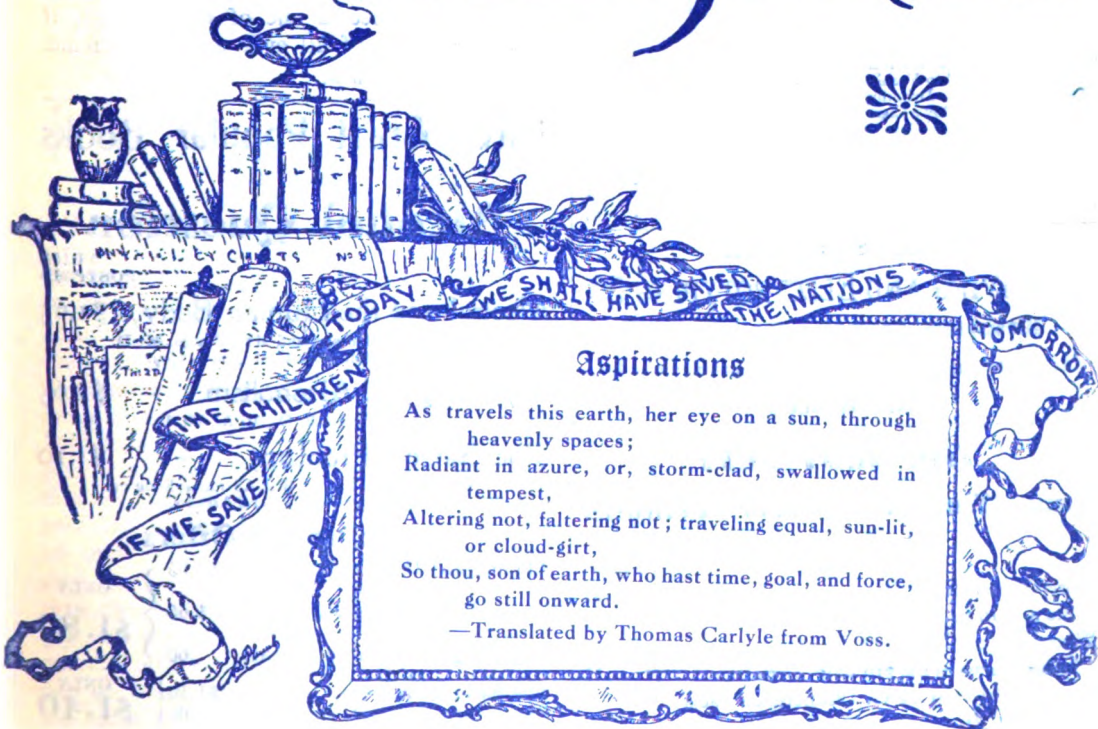
*Less 15c if this is chosen.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull Street, Boston, Mass.

Please mention the JOURNAL when writing to advertisers.



THE SCHOOL PHYSIOLOGY JOURNAL



Aspirations

As travels this earth, her eye on a sun, through
heavenly spaces;
Radiant in azure, or, storm-clad, swallowed in
tempest,
Altering not, faltering not; traveling equal, sun-lit,
or cloud-girt,
So thou, son of earth, who hast time, goal, and force,
go still onward.

—Translated by Thomas Carlyle from Voss.

Just Published

Carpenter's How the World is Clothed

60 cents

Takes the children on a personally conducted tour around the world to investigate the sources of their clothing. They start out first to those regions which produce the vegetable fibres of commerce, including cotton, flax, hemp and jute. Then comes the study of animal fibers, such as wool and silk; of leather, rubber and furs; and this plan is followed as to every other article which forms a part of clothing, including feathers and jewels, needles and pins. The book takes up not only the production of the raw material, but also its transportation and the processes of its manufacture. The illustrations are numerous and novel.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

CONTENTS.

	PAGE
Germany's Influence on America's Drink Problem	81
Relation of Alcohol to Feeble-Mindedness	84
Possibilities of Wine Drinking	85
Egyptian Donkey-Boy's Cigaret	86
Dangers in the Use of Beer	87
Our School Hygiene	88
How the Liquor Business Tramples Upon Liberty	89
Editorials	90
Grammar Lesson—Fourth Year—Air and our Lives	92
Glances at a Year's Work	94

THE SUFFOLK

ENGRAVING AND ELECTROTYPING CO.

Illustrators, Engravers, Electrotypers,

234 CONGRESS ST. and 275 WASHINGTON ST.

BOSTON, MASS.

THE BEST YET!

New Wine and Beer Leaflets

	PER 100
False Claims for Wine	\$.30
Wine a Peril to Childhood	.25
Wine Does not Drive out Drunkenness	.25
Alcoholism in Wine-growing Countries	.25
Commercial Fictions vs. Disinterested Facts about Beer.	.35
Alcoholism and Tuberculosis	.30

Prices very low — Send \$.05 for samples

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy.

\$4.00 per Dozen.

\$25.00 per 100.

Address

HENRY R. PATTENGILL

Lansing, Michigan.

THE reasoning man has long since agreed that intemperance is one of the greatest, if not the greatest of all evils among mankind. —Abraham Lincoln.

Three Great Popular Books

— ON THE —

Alcohol Question

PRICE
POSTPAID

Alcohol and the Human Body, \$1.65

By Sir Victor Horsley and Mary Sturge, M. D.
New Edition ready about Jan. 1, 1909.

Psychology of Alcoholism, - \$1.65

By Geo. B. Cutten, B. D., M. A., Ph. D.

The Saloon Problem, - \$1.10

By Prof. J. N. Barker, Best All-round Book on
Economics and General Aspects.

Combination Offers

Alcohol and the Human Body,	\$1.65	} ONLY
Psychology of Alcoholism,	1.65	
Physiology Journal, one year,	.60	
		} \$1.80
The Saloon Problem,	\$1.10	
Physiology Journal, one year,	.60	
		} ONLY
Three Books and Journal, one year,		
		} \$3.85

Write for prices on any other desired combination.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

Digitized by Google

School Physiology Journal

Vol. XVIII

BOSTON, FEBRUARY, 1909

No. 5

Lincoln

By Edward Vance Cook

WHENCE did he come? From the rearmost
rank
Of the humblest file. Was it some mad prank
Of God that the mountains were bare and blank
And the strong tree grew on the lowliest bank?
Not so! 'Tis the Law. The seed blows wide
And the flower may bloom as the garden's pride,
Or spring from the ditch. Nor time nor place,
Condition nor caste, nor clime nor race
Can limit manhood. The proof is the case
Of Lincoln

What was his power? Not kingly caste,
Nor jingle of gold howsoever amassed;
Not Napoleon's force with the world aghast;
Not Talleyrand's cunning, now loose, now fast;

Not weak persuasion or fierce duress,
But strong with the Virtue of Homeliness
Was Lincoln.

O, Uncommon Commoner! may your name
Forever lead like a living flame!
Unschool'd Scholar! how did you learn
The wisdom a lifetime cannot earn?
Unsanctified Martyr! higher than saint?
You were a MAN with a man's constraint.
In the world, of the world, was your lot;
With it and for it the fight you fought,
And never till Time is itself forgot
And the heart of man is pulseless clot,
Shall the blood flow slow when we think the thought
Of Lincoln. —Selected.



GERMANY'S INFLUENCE ON AMERICA'S DRINK PROBLEM.

BY PROFESSOR WALTER RAUSCHENBUSCH, ROCHESTER, NEW YORK

Extracts from an address delivered before the Evangelical-Social Congress at Dessau, Germany, June 10, 1908.

I BELIEVE that in certain ways Americans can be made useful to the Germans just as the Germans have been made useful to the Americans in many ways.

I speak of the great mass of the morally strong American population, which in its thought and religion is under the influence of American ideals. It consists mostly of total abstainers. Even where individuals drink there is no social compulsion to do so. I have never been at the table in any American house in which beer or wine was offered to me. I believe that in their festal banquets the Americans are not behind the Germans. But in their academic banquets neither wine nor beer are on the table. They are abstemious on such occasions, and for that very reason they are very jolly. They laugh much more than the Germans; they are not without the joy of living. Individuals may drink and many families take a little wine at their mid-day or vesper meal, but for two generations the habit of social drinking has ceased.

At American railroad depots wine and beer are not to be seen. They are confined to the bar or to the saloon, which are not frequented by decent women, or children. Such men as you or I would not go there.

Last year I brought my children to Ger-

many that they might learn thoroughly the tongue of their forefathers but I had to make their moral judgment tolerant before I brought them.

Some time ago a former student visited my American home and I took him, along with my ten-year-old son, to a German restaurant. The little fellow said, "Papa, what is that yellow stuff that the men are drinking?" It was the first time that he had ever seen beer.

It is interesting for us to observe when we visit the Fatherland, how drinking is associated with music, natural beauty, and sociability, and when the student comes to Germany he learns to drink because he is under the powerful influence of the suggestion of the crowd, from which he is free in America. Germany is for us the classic land of moderate drinking.

GERMANY'S CHOICEST, VICTIMS OF DRINK

When we look more closely at German life, we see that the drinking habit is not harmless. *The coarsest, the most brutal scenes, that I have ever witnessed in all my life, were not in America but in Germany.* We see continually—with indignation—how many lives are spoiled by drink. But we see that, also, in Germany among a class of young men who

are almost immune in America—the educated young man.

I have been educated partly in Germany and partly in America, and the friends of my youth are in both countries. Among the American friends of my youth I do not know a single one who has been injured by drink, but *among my friends and relatives and school fellows in Germany* I know a large number who have been ruined in the saddest way, so that the most heart-breaking family tragedies have occurred.

It is worth your while to think about this and ask yourselves why in so many of the cultivated families of Germany the social drinking habit demands so many more victims than it does in similar circles in America.

Think only of the many German men, poets and thinkers who have been ruined by alcohol. I remember some of the sweetest and dearest names in our German literature ruined by drink. I know of only one among the Americans, Edgar Allen Poe, and he belonged to a time before the total abstinence movement began.

If we look through our German history, we see that many of our intellectual heroes have suffered from chronic alcoholism; and we learn that all our German history has been more deeply influenced by the chronic alcoholism of some of the chief leaders than most of us would think.

GERMAN SOCIAL LIFE DEBASED AND ENDANGERED BY ALCOHOL

And we see still more the danger of our social drinking habits. So many abnormally reddened faces, so many eyes with baggy eyelids! Two things struck me immediately on my landing in Hamburg or Bremen,—the immense number of uniforms, and the immense number of corpulent men.

The physiognomy of our academic youth is strongly marked by the influence of social drinking. I am a University professor and when I look at the students here I miss the inner brightening up of youth, and the ideal *transfiguration* of enthusiasm. I see so many, many spongy faces, so many *dough faces*. The cause is partly to be found in the drinking habits of the University.

In America the first question addressed to a guest on the arrival is, "Would you like to wash yourself?" In Germany it is, "What will you take?" That means, "Will you alcoholize yourself?" I can hardly avoid laughing when I see the comical seriousness of German drinking ceremonies. "Ich komme Ihnen eins vor." "Ich komme Ihnen nach."

If drinking is ennobled by the presence of music, etc., on the one hand, the nobler sides of social life are brutalized and debased by alcohol. Think only of the drinking at baptisms, weddings, funerals, at Christmas, Easter, Whitsuntide.

Have your ladies ever considered the fact that they can go out at night alone without male protection in America, while they cannot do it here? The American girl can drive out and walk out with young men just as she likes. That would be impossible if the men were drinkers. The freedom of women in America depends on the almost universal abstinence in those circles of which I am speaking.

ABSTAINERS' PERSONAL LIBERTY LIMITED

Another point which I should like to impress on you is that the social drinking of Germany is a *limitation* of "personal liberty". While the anti-prohibitionists of America base their arguments on their conception of this very "personal liberty". I speak from personal experience.

I spent three years at the gymnasium of Guetersloh in Westphalia. I remember that institution and its teachers with great love and I am thankful for what I received there. I was a total abstainer when I went there, and my relatives and school-fellows were astonished to see a youth who drank neither wine nor beer and yet was not crazy. I was half grown and immature. For one year I held out and then began to drink; and there was more joy over one sinner who began to drink beer than over ninety and nine just persons who remained abstinent.

It is just the same with children. Last summer I took my little girl, thirteen years old, to a very agreeable family in Kiel, and they were surprised that she did not drink the wine offered to her.

Here in Germany the "personal liberty" of the total abstainer is threatened. The universal habit is the suggestion of the crowd, and an additional pressure is exercised by restaurant keepers and waiters. If I say to a waiter, "I drink no wine nor beer", he wants to know what asylum I escaped from. And this happens nowhere but in Germany. I have just come from Italy. When I told the waiters there, "We drink no wine", they bowed and brought me water. In some German restaurants an addition has been made to my bill because I did not drink.

In the really democratic churches of America with a few exceptions, total abstinence is considered as normally Christian.

"PERSONAL LIBERTY" A QUESTION OF APPETITE AND GREED

(Prof. Rauschenbusch's lecture continued.)

AMERICAN GERMANISM DISCREDITS GERMANY

I should like to make one last remark. The mass of Americans derive their impressions not from Germany, but from the German drinkers they see in America, and that is not very pretty. Dr. Ragle has lately published an article in the *Christian World* (*Christliche Welt*) on the influence of the German-American, which I would recommend to your consideration. It contains bitter facts. Very many Germans who bring their drinking habits to America have been ruined thereby.

Besides that, the ideal adornments of the social drinking customs have vanished in

ruptionist in order to maintain his so-called "personal liberty."

For instance (1896) after unspeakable exertions, a reform government was inaugurated in New York. Roosevelt was named Police Commissioner and closed the saloons on Sunday because the law demanded it. Otherwise the saloons were kept open in spite of the law, and every man who visited them was consciously disobeying the law.

At that time the Germans put themselves on the side of the lawless element, and, in order to be able to visit the saloons on Sunday, they united with the notorious Tammany Hall forces and thus sacrificed the hardly-won reform to their appetite for drink. Thus on account of their drinking habits the Germans seemed the advocates of corruption.



America. They cannot be exported. They are imitated but the imitation is uglier and meaner. They talk a great deal about the defence of their Germanism, and preventing its absorption by American "muckers" (one of the "muckiest" of German words, which could perhaps be best translated by the words "canting bigots").

But if we get rid of the phrases, what is this Germanism that is so dear to them? Is it Schiller? Is it Goethe? Is it Kant? No! It is the right to be jolly, with cigars and beer.

THE SACRIFICE OF REFORM TO APPETITE

But in order to secure this right, the German in America often sells the cause of reform and votes for the destructive party. In America the saloon is the chief source of political corruption, and in municipal politics the German often makes common cause with the saloon, and thereby strengthens the cor-

PEOPLE'S RIGHTS VS. BREWERS' DIVIDENDS

Again, a short time ago a law was proposed in the House of Representatives at Albany, to give "local option" to the towns. That means that every elective district in the cities should have the right of deciding by public vote whether saloons should exist in that district or not.

The committee of the legislature gave each side the opportunity of pleading its cause. The majority of those who publicly protested against the local option law, was German. In the name of "personal freedom" they protested against permitting their fellow citizens the freedom to decide whether the saloons, in their *own neighborhood*, were to be permitted to brutalize the people. The right of decision remains with the capitalistic brewers who are mostly Germans. The law was rejected. Thanks to German influence, the saloon can continue its mission and the citizens can do nothing against it.

These are deplorable facts, but they should not remain unknown to you.

For two generations the Americans have been free from the custom of social drinking. Our fight in America is now with the great capitalists, who battle for their interests with a power that injures the people in order to obtain dividends. And in this great conflict which the American people are now carrying on with a fire and with a victorious force such as has never before appeared, Germany stands on the opposite side both through moral influence and through her sons.

It is chiefly through the influence of its free churches and its ethical Christianity that the Christian Americans have come more quickly than other people to the idea of breaking down the drinking customs and promoting abstinence.

The Americans are in advance of all other people in this matter. You in Germany are in the beginning of this conflict. The money

interests do not feel threatened. [I doubt this. Translator.] You do not yet know enough in Germany of the artifice, the cunning, the criminal force, which these money interests display in America.

You have still so to modify the drinking customs of Germany that it will be quite as easy for a total abstainer to abstain as for a drinker to get his drink.

Every German should consider his position in this matter. This is a social movement in which you need not wait for the initiative of your government. Each can begin for himself. Every abstainer who freely maintains his abstinence can help to oppose the force of suggestion by the crowd. He will thereby help everyone who is weaker than himself. I would like to express my opinion, that no one can maintain this principle unless he is personally an abstainer. If he is not an abstainer, then his anti-alcoholic work will be ineffectual. [Lively applause.]—*Christian Register*.

✱ ✱ ✱

For every pound you save in education, you will spend five in prosecutions, in prisons, in penal settlements.—Lord Macauley.

✱ ✱ ✱

THE RELATION OF ALCOHOL TO FEEBLE-MINDEDNESS

BY W. A. POTTS, B. A., CANTAB, M. D., EDINBURG

Late Medical Investigator to the British Royal Commission on the Care and Control of the Feeble-minded

THE recent report of the Royal Commission on the Care and Control of the Feeble-minded furnishes serious matter for reflection for it proves by means of personal investigations that congenital mental defectives occur in our population to nearly the extent of 1 in every 200.

Dr. Wigglesworth, after studying 3,450 cases of insanity during a long series of years, stated that alcoholism is a fruitful cause of idiocy, mental defect, insanity, and other nervous diseases in the offspring. He considers that there is "a direct poisoning of the germ-plasm itself by the alcohol circulating in the blood, and a consequent direct injury to the cells of which this structure is composed, and which by reason of the injury are prevented from developing into a stable organism. If the alcoholic poisoning of the germ-cells and ovum have reached a certain degree of intensity, imbecility, or even profound idiocy, may be expected to result; while if of a less degree, the injury may manifest itself in the various forms of adolescent insanity, when adult life is developing, or is attained."

ELIMINATION BY ALCOHOL

There is a group of scientific workers who admit that alcohol has the injurious effects on the offspring I have described, but at the same time do not attach such great importance to its evil consequences because alcohol, in their opinion, is more an eliminator of the unfit than a producer of the unfit. Alcohol undoubtedly tends to the premature extinction of its victims, but it does not necessarily curtail their reproductive powers, as is often assumed. An examination in Paris of 402 working-class and pauper families, including 81 families of drinkers, showed that drinkers have more children than non-drinkers; but they have considerably more miscarriages, premature labors and dead children. On the whole, 42 per cent. of drinkers' children die before they reach the first year—that is about 14 per cent. more than the children of other people. Not all the offspring die. No doubt in a natural state the comparatively smaller number that are born would as a rule succumb, handicapped as they often are from the start. The conditions of civilized life, how-

ever, are not quite natural; charity and relief step in, after the mischief has been done, to save the debilitated and deformed. Left to themselves, I am sure, many of the feeble-minded would soon cease to trouble us; but it is the pride of countries such as ours that natural elimination of the unfit is prevented. We are so careful of the individual, so careless of the type. In this connection we may reflect that when a toxin finds many victims *in utero*, some of those who escape premature death must only just do so, and can scarcely have an average mental and physical endowment. Some of these individuals may pass as normal up to a certain age, when in consequence of their original poor stock of vitality, early mental or physical decay will appear.

When I conducted an investigation for the Royal Commission on the Care and Control of the Feeble-minded at Stoke-upon-Trent, I was able to ascertain the early history of many of the workhouse inmates; in the case of some chronic alcoholics I was able to state definitely that they had not originally been feeble-minded, or shown any sign of a neuro-pathic constitution. A summary of the family histories of the school-children to which I have referred is published in the proceedings of the Royal Commission; they establish one or two important points. In the first place, while it is clear that alcoholism by itself in one individual may apparently do no harm, when it is continued for more than one generation its effect in the production of amentia is very serious. I found that in only one per cent. of normal children were both father and mother alcoholic, but among the feeble-minded the figure was 5.2 per cent. My figures also show on analysis that drinking on the part of the mother is more serious than when indulged in by the father; thus among defectives the father drank in 27.6 per cent. of cases, which is not twice as much as the 14 per cent., among the normal, but the mother drank in 14 per cent. as compared with 3 per cent. among the normal—a great difference. Bevan Lewis had previously drawn attention to the influence of maternal drinking in the production of feeble-mindedness.

CONCLUSIONS THAT MAY BE DRAWN

In conclusion I would merely say that it appears to me that the evidence is not clear that alcoholism by itself in the father will produce amentia; but it is quite plain that in combination with other bad factors it is a most unfavorable element, while maternal drinking, and drinking continued through more than one generation, are potent influences in mental degeneracy.—*British Journal of Inebriety*.

POSSIBILITIES OF WINE DRINKING

BY E. L. TRANSEAU

A PAMPHLET recently issued by California wine promoters tries to show that wine prevents intoxication by relating that the children of a certain wine grower, trained from childhood to use wine, are now grown up and "that they have never known and never will know what intoxication means". It is possible.

A match for this possibility is given in the *Annales Antialcooliques* (November and December, 1908), published in Paris. The November number tells of a man trained from childhood to drink what he was taught to consider the hygienic wines of France, who



"Go wake the seeds of good asleep throughout the world."

one day became intoxicated. The usual depression followed and he attempted to commit suicide by striking himself on the head with a bottle. The result was a deep cut, but the sight of blood aroused the instinct of self-preservation and he ran out to a drug store for help. On the way he met a policeman who asked him how he came to be in such a state. He told the policeman to go about his business which led to a struggle with the officer. The man broke away and again attempted to kill himself by dashing his head against a convenient object. He did not suc-

ceed, however, and was taken to an inebriate asylum where he finally became an abstainer and joined the Good Templars.

About two years after on reading the above account of his case, he wrote the editor of the paper a letter containing among other statements the following:

"The history you publish of my case is correct with one small exception. I am not the son of a drunkard. I had no predisposition for drink and I did not become an alcoholic until I was forty-four years old.

"How then did I become one? Simply by the moderate use of wine, for I have never drunk anything but wine". He goes on to show the folly of calling wine a temperance drink and then exclaims:

"Poor drinkers of yesterday, today and tomorrow! I pity you with all my heart, for you are being carried in the current toward dangerous reefs, and through ignorance, like myself, you will fall into the abyss. Alcoholism is smouldering within you, although you doubt it. It needs but a spark of anger or other accessory cause for you to be impelled, as I have been, to the commission of various misdemeanors, losing for the time, the dignity of manhood and self-respect."

The letter closes with an appeal to all drinkers not to wait until misfortune comes, but to cease drinking and to cease offering it to others. All his misfortunes, the writer says, he attributes to wine.

Putting these two possibilities against each other one sees that it is not safe to predict that a wine drinker whether of grape or apple wine (cider), will never become intoxicated because he may begin a course of drunkenness after he is forty-four years old. Many are overcome earlier.

The question as to which is the more frequent result of wine-drinking, misfortune or the escape therefrom, is one that cannot be settled offhand. Single instances will not decide; the superficial glances of rapid-transit tourists through wine-drinking countries will not decide. Neither is the number of cases of intoxication seen or unseen a measure of the injury actually done. And when the statistician, the clinician, and the laboratory investigator have piled up their evidence, as they have done and are doing, it is still not all in. It will never be all in for as Dr. Williams shows in the December *McClure's*, for every individual that dies from alcoholic disease there are scores that suffer in lesser degree; for every complete mental collapse caused by drink there are scores of partial collapses; for every criminal, scores of less moral delinquents; for every in-

capable seeking alms, scores who hide their indigence. "But the members of all these vast companies of sufferers lie without the field of the statistician."

Shall the wine-drinker, even though he and his family may possibly escape some of these miseries, give up his pleasure for the sake of those certain to suffer from the practice he defends? His answer will be the measure of his moral standard.

But the wine seller, he who promotes the cause of such miseries for the sake of gain, whether ignorant of or ignoring the consequences will find himself sooner or later called upon to put himself in accord with a more enlightened public opinion.

THE EGYPTIAN DONKEY-BOY'S CIGARET

BY EDWARD PAGE GASTON, F. R. G. S., LONDON

IN connection with my trip to Egypt last spring I heard of an Englishman who had a shock of amazement administered to him by a simple donkey-boy in Cairo; and incidentally as a Christian he learned a lesson in morality from a Mohammedan lad.

"He refused my cigarettes", said the traveler, "and in my surprise I nearly fell off my donkey."

"What! not smoke, Hassan? I thought all donkey-boys smoked".

"I don't," said Hassan simply, "but if I did my people would beat me, and quite right, too".

"But who are you and who are your family?"

"Ah," said the humble boy, grandly, as his tired dusky face lighted up and his white teeth flashed, "we are real Soudanese, and in the Soudan we are very strict. To smoke, to drink wine, to drink even coffee at times, and not to pray—these are the shameful things forbidden us by the great and good Prophet Mohommet! And if a man does any thing, impure, according to our religion, they hang him in shame with his face bare toward the sun."

Then the donkey was urged on again across the sands toward the great Pryamid, and the white man was silent while his cigaret was forgotten.—*Boy Magazine*.

Instructor, in despair.—Well at least you can tell me where the Magna Charta was signed?"

Student, cheerfully.—Oh, yes! King John signed that at the bottom"—*Harvard Lampoon*.

A Plantation Song

By Frank L. Stanton

Dey grumbles 'bout de winter, but hit never come
ter stay ;
De vi'let in de snow-drif' is a-dreamin' er de May ;
De sunshine's over yonder, shinin' hot fer makin'
hay,
En der gwine ter be a harvest in de mawnin'!

Dey ain't no use in sighin' we'n de thunder rollin'
nigh,
En shakin' er de winders in de blue bend er de sky ;

De storm's making ready fer de rainbow, by en by,
En we'll reap de happy harvest in de mawnin'!

Den sing acrost de medders, en sing acrost de wheat,
En sing acrost de gyardens whar de roses lookin'
sweet ;
En listen, listen, listen, 'twell you heah de worl's
heart beat
Fer joy er all de harvest in de mawnin'!

—Selected.

THE DANGERS IN THE USE OF BEER

BY HUGO HOPPE, NERVE SPECIALIST, KONIGSBURG, GERMANY

[Continued from the January JOURNAL.]

BEEER plays a very important role, also, in a class of maladies that are grouped under the name of "diseases of metabolism" (those affecting the assimilation and change of matter taking place in the cells), among which are *obesity*, *diabetes* and *gout*.

The fatty changes are strictly characteristic of the beer-drinker. One needs only to picture the true beer-seller with his bloated, mushroom face and his colossal stomach in order to have the prototype of the beer drinker, a type constantly increasing outside of the beer-selling class, and it is to be seen even among our students and particularly among the upper class university students, and sometimes, as in Bavaria, even among children.

Dr. Stumpf of Munich says that as a vaccinator he sees every year many children, some of them very young, already bearing the stamp of habitual use of beer. These are usually the children of beer-sellers who look upon this obesity as an indication of particularly good health, and are proud of it. The fatty deposits are present in abnormal amounts not only in the usual repositories for fat, as in the skin, in the tissue meshes, in the mesentery, and over the kidneys, but also between the muscle fibres which in the normal condition are destitute of such ballast, and in the heart muscles, where it is especially dangerous, a condition that is often found in connection with fatty liver.

The abnormal accumulation of fat is a hindrance to movement; it unfits one for any kind of hard physical work; it causes one to be easily fatigued, to perspire on the least exertion, to be out of breath and to have heart palpitation if he but climbs a flight of stairs; and greatly endangers his chances of recovery

in infectious diseases, because it weakens the power of the heart. These obese persons have also a greater tendency to disease than others.

It is well known that gout, which arises from unhealthy changes in the assimilation of nitrogenous matter, is most common in people who live high and at the same time make free use of alcoholic drinks. It is not generally a disease of the poorer classes, the whiskey drinkers, but of the well-to-do who drink wine and strong beer.

In England, where gout is quite frequent, most authors hold the cause to be the use of porter and other strong malt liquors. But Prof. von Strumpell has recently shown very conclusively that chronic alcoholism, particularly the continuous immoderate use of beer, year in and year out, plays a large role in the origin of gout, to which there is also, usually, a hereditary tendency. For this reason gout is a very frequent disease in Bavaria, and a physician living in one of the French middle cities told Dr. Strumpell that there nearly every tenth man suffered from gout.

Brewers and their descendants furnish an exceptionally large number of cases of gout. Among brewers in England, between 1880 and 1892 there were 500 deaths from gout to every 100 occurring in other callings; among tavern keepers it was six times as great.

Diabetes, which is due to disturbances in the assimilation of carbohydrate foods (the starch and sugar class) is in many cases the result of free indulgence in alcoholic drinks, particularly in beer. Strumpell has found a special form of diabetes conspicuous among beer-drinkers, in whom there is a diminished or weakened power of the body to break up sugar. Sugar taken on an empty stomach is

not completely changed, as it is in normal persons, but appears again, in part, in the urine. This disorder Strumpell found particularly among upper class university students who have taken part for a long time in the carousals of university life, and among brewery hands who, in their corpulence, already bore the marks of the beer-drinker.

Strumpell emphasizes the fact that we know of no other external source of injury that appears to weaken so directly the sugar-destroying function of the body as the habitual, immoderate use of beer. Injury to this function can be demonstrated after the use of moderate amounts, in some cases after as little as a pint in others only after two and one-half quarts of beer. If injury to this function is continued by the daily use of increasing amounts, the condition becomes more and more serious and may end in actual diabetes.

The frequency of this disease among brewers is shown by the English vital statistics (1890 to 1892), which give the death-rate from diabetes among brewers as 243 per cent. of that of the general population. In tavern keepers it was 271 per cent.

These three diseases of metabolism, obesity, gout and diabetes, stand in very close relation to each other, all three often being present in the same individual at the same time, or one following the other, and aside from constitutional tendencies have, as their chief external cause, chronic alcoholism in the form of beer, which Prof. Strumpell calls "Gambrinism".

It is to be particularly emphasized that beer alcoholism, as well as alcoholism in general, lowers the resistance of the body to all diseases by injuring most of the organs. And herein lies the chief danger in the general widespread use of beer. The drinker is especially open to attacks of infectious diseases, and especially from the most common and most dangerous of all infectious diseases, *tuberculosis*.

In every 1000 deaths occurring in the general population of Prussia in the year 1901, 160 were due to tuberculosis; but among beer brewers from 1884 to 1885 and from 1898 to 1901, from 241 to 345 deaths in every 1000 were due to tuberculosis.

Both the sick-rate and the death-rate is greater among brewers than among other workmen. The beer-brewers and managers have also a death-rate double that of those in other alcohol industries, the frequency of accidents being greater even than among miners. *Translated for the SCHOOL PHYSIOLOGY JOURNAL.*

OUR SCHOOL HYGIENE

THE school desk, although now adjustable, is still made use of in a manner to cause mal-posture, and as a result, spinal curvature. In many of our schools the color of the walls and ceiling has thus far been given little attention. We are still following, in our approved kindergarten practice, the prescription of games or plays which require marching and singing at the same time, with the result of much dust inhalation. Dust and tuberculosis are still with us.

We have thus far made little investigation into fatigue, its etiology, its symptoms, or the method of its alleviation. Home work increases as the courses of study acquire more content. Books by the pound are carried home at night. The eyesight of children becomes increasingly defective as they progress through the grades, and to increase the defects we give young children books of highly glazed paper, printed with types frequently of improper size. Incipient cases of St. Vitus' dance are not detected. Stair-climbing becomes a greater burden to our girls as our school buildings go farther into the air.

The relation between proper nutrition and effective school work is still recognized by a few but not by many. We are still ignorant as to the great number of children whose vigor is at a minimum because of poor dentition. We have yet failed to adapt our courses of study to the requirements of the period of adolescence. We are but making a beginning in the discussion of defective and abnormal children, and it has been a few years only that we have known what was meant by an "adenoid" face. Program-making has been determined by the requirements of the course of study rather than by the requirements of physiological age and fatigue. We have just begun to discover the corrective effect of play of fatigue, malposture, defective circulation, and similar evils.—*World's Work*.

The incumbent of an old church in Wales asked a party of Americans to visit his parochial school. After a recitation, he invited them to question the scholars and one of the party accepted. "Little boy," said he, to a rosy-faced lad, "can you tell me who George Washington was?"

"Iss, surr," was the smiling reply. "'E was a 'Merican gen'ral."

"Quite right. And can you tell me what George Washington was remarkable for?"

"Iss, surr. 'E was remarkable 'cos 'e was a 'Merican 'an' told the trewth."—*C. E. World*.

HOW THE LIQUOR BUSINESS TRAMPLES UPON LIBERTY*

BY AUGUST FOREL

Formerly Professor of Psychiatry in University of Zurich

IT is more than a year since Finland voted to prohibit alcoholic drinks. It has seemed very strange that this law passed by such a large majority of the Finnish people has had to wait so long for ratification by the Czar. But the reason is at last explained.

There has been a report from the French Chamber that France would protest against this law because it took away a market for her wine. At first this report could not be believed but now it seems to be true. A correspondent of the Finnish Journal, *Uusi Suometar*, has interviewed the French embassy at St. Petersburg where he has seen a number of persons and, among them, the ambassador. The latter openly avowed that the French were hostile to this Finnish law because it was a disadvantage to French commerce. The Count Dormessan, an attaché of the embassy, was more explicit and admitted that the French government had lodged a protest against the law, and that the embassy had addressed a note on the subject to the Russian government.

He also affirmed that the question of the Russian loan and this prohibition law were the objects of negotiation in Paris between the Russian ambassador and the French minister of foreign affairs. "In France," he said, "we cultivate the vine upon a grand scale, and it is therefore necessary that we preserve the markets for wine." Speaking of the conditions of the loan and of the desire of the French to sell their wine he said it was indispensable that the matter be settled to the satisfaction of both parties.

The correspondent then addressed himself to some of the high Russian functionaries who professed to be greatly astonished and even denied it but their denials carried little weight.

Why refer to these facts? Because they show that for purely financial reasons, that is, in the interests of the wine business, the French government will trample upon the liberty of a small and feeble people like the Finns who are incapable of self-defence, a people who wish to rid themselves of the injuries from alcohol under which they suffer.

The affair strikes the Russian government in a weak place, that is, its embarrassed finances, and threatens it with the refusal of a loan unless it will defeat the Finnish law. And all this is done in the interests of the wine-growers and against the true interests of

the people. For France herself is actually suffering from the effects of a progressive alcoholism, which fills her insane asylums and her prisons, degenerates the race, diminishes the births, increases the deaths and weakens the people.

Russia also is progressively alcoholizing herself even more than France. It would be for her best interests not to defeat but to imitate the Finnish law. The Russian disasters, the crimes and atrocities that are widespread in Russia are in large part the consequences of alcoholism.... But what matter if only the state treasury can be filled: "After us the deluge."

What blindness! What shameful mercenariness; unworthy of a Republic that claims to be free; unworthy of descendants of the grand Revolution with its beautiful device, "Liberty, equality, freedom"; unworthy of the government of a country that suffers so profoundly as does Russia.

Society has become so venal, so enslaved to Mammon that it has lost all sentiment of independence and of justice, lost even the comprehension of its own real conditions of existence and of the vital interests of the race. "All for gold", this is the device that should ornament the banners of European governments.

Poor Finland! You have more of the right ideal. They wish to pluck you to fill the money sacks of the French wine merchants and those of the Russian government. But do not lose courage. Struggle on. "Death itself is a lesser evil than cowardice, dishonor, and venality."—*Translated for the SCHOOL PHYSIOLOGY JOURNAL.*

FOR THE CLASS IN CIVICS

A BREWER is reported to have said at a convention, last summer, "For self-protection we must get into politics".

What then must the Christian citizen do?

(Note the discussion of this question on pp. 83, 84, 89, 91.)

AN ARTICLE in the *Tribune de la Bourse*, St. Petersburg, calls attention to the fact that the present cholera epidemic gives clear evidence that alcohol even in moderate amounts increases susceptibility to the disease and mortality. The number of cases is strikingly increased on the days following Sundays and holidays—when the drinking is heaviest.

The frequenters of the saloon are the first to fall victims to the epidemic.—*L'Abstinence*, (October 3, 1908.)

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.\$0.50 each
Clubs of 50 and over..... .40 each
Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

"Right arms and armors, too, that man
Who will not compromise with wrong;
Though single he must front the throng;
And wage the battle hard and long.
Minorities, since time began
Have shown the better side of man:
And often in the lists of time
One man has made a cause sublime."

THE EVIL OF DRUNKENNESS

TO the wine and beer producer the alcohol problem is simply one of *drunkenness*. The wine-grower tries to convince the public that wine will "forever banish" drunkenness; the brewer declares that beer will do it. Both assert that there is no drunkenness in the wine and beer drinking countries of Europe. Both affirm that *drunkenness* in the United States is due to whiskey, and that the substitution of wine or beer for whiskey would entirely abolish the evil of drunkenness.

The present activity of the publicity agents of these trades in mailing their specious arguments to every obtainable address will delude many unless the regular channels of reputable and authentic information keep constantly before the public the rebutting facts. These are:—

1. *Drunkenness* is but the gross, striking, outward manifestation of one of the evil effects of alcoholic beverages. Other effects no less disastrous, and more frequent and far-reaching, take place without any outward visible sign of intoxication.

2. The wine and beer producing countries of Europe, particularly Germany and Switzerland, are today the centers of a most active campaign against alcoholism. The most searching scientific investigations have proved beyond the shadow of a doubt that the alcoholic habits engendered by the free use of cheap wine and beer are undermining the prosperity, health, morals and perpetuity of the wine and beer drinking nations, and the

organizations for combating them are rapidly increasing in membership. Some societies are receiving appropriations from the governments for carrying on their work.

3. Scarcely half as much alcohol is used in the form of whiskey in the United States as in the form of beer. The alcohol question in America today is, therefore, far more a beer problem than a whiskey problem.

Furthermore, if beer, which is only one half as strong as wine, does not reduce the consumption of alcohol, how can the wine-grower expect that a more generous use of his stronger liquor would "forever banish" not simply drunkenness, but the host of other evils that are everywhere increased in proportion to an increase in the consumption of any kind of alcoholic beverage.

TOO LATE

BY DR. ALLI TRYGG-HELENIUS, HELSINGFORS,
FINLAND

I KNOW a young student, otherwise amiable, who is addicted to drink. As no warnings had any effect upon him, he was sent on a long sea voyage, but it did no good. He was confined for a year in an inebriate institution, but this also had no effect. He was discharged from the institution, and the day he returned home he took money belonging to his sister and spent it for drink.

I was considerably disturbed about this and took him to task for it.

"It is shocking", I said, "that you should behave in this way. Do you not know where this will lead you?"

"Do I know?" he interrupted. "I can assure you that I do know, and, indeed, a thousand times better than you do."

He put his hand in his pocket and drew out a letter.

"Do you know what this is? It is a letter from my old parents. I dare not open it for I am afraid to read that they have learned how it is with me again. I have seen my father year after year becoming more and more bowed and broken and I know that sorrow over me is the cause. My poor mother has cried her old eyes out, and if all that has done no good, do you think your remonstrance will help? I will tell you why you can not help me; *you come too late*. Why did not some one tell me when I took the first glass that it could bring me to this. Now there is no help for me".

With this he turned and went out.

THE above incident is but another index-finger pointing to the one central truth that

is indispensable to the purpose of all temperance instruction for the young, namely, the danger in beginning to drink. Immediately connected with this fact are the associated ones concerning the narcotic nature of alcohol, its power to weaken self-control and to establish an abnormal craving.

Truth can never be inconsistent with itself, hence no specious arguing about the harmlessness of moderation can stand before the fact which underlies the pathetic cry of this young man,—“You come too late. Why did not some one tell me when I took my first glass that it could bring me to this?”

Unenviable, indeed, must be the inner reflections of any teacher conscious of having neglected to give this warning in time for it to be preventive.

THE PASSING IDYL

GERMANY has for many years been held up as the classic land of moderate drinking and the alleged idyllic conditions have long constituted some of the chief stock arguments of the brewers. That these conditions are far from being as idyllic as painted is clearly shown in the illuminating address of Professor Rauschenbusch at an important Social Congress in Germany last spring.

No patriot who reads his comparisons of the customs of the Fatherland can for one moment prefer to have “America inspired rather than sober.”

But if the first section of the professor's address causes a feeling of complaisance that Christian America has accomplished so much for temperance, the second part will doubtless dissipate the sense of security, for it shows that in the opinion of this keen German-American observer, the “personal liberty” agitation of which we hear so much, is chiefly inspired by the capitalistic brewers, most of whom are German.

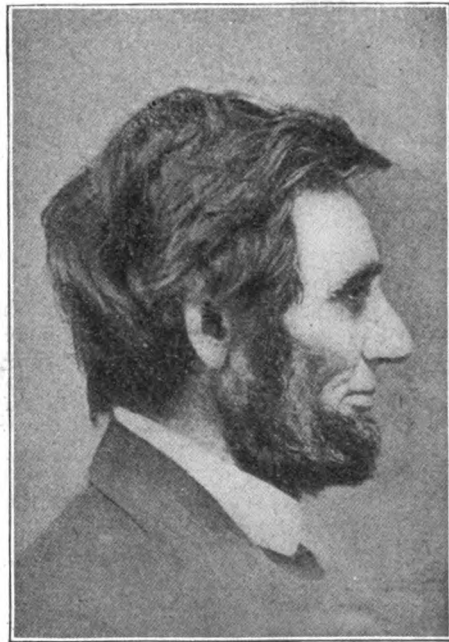
That his shrewd guess is pretty close to the mark is apparent to even the casual reader of the *Brewers' Journal*, the accredited organ of those capitalists. (One half of this periodical is printed in German.)

For instance an editorial in the December issue bemoans the fact that owing to the “fanatical and unreasoning clamor” of prohibitionists, “Government Internal Revenue has been greatly impaired” during the last year “and with it the individual revenue of the producing brewers.”

But the next paragraph which is really a summary of many pages of reports of the big

things they have accomplished, continues as follows:—

“Having said this much of what may detract from the true goodness of the historical character of 1908, we are bound to remark that many things have happened during the past year which will be joyfully remembered by the trade, whose organized bodies throughout the United States have received the hearty and determined assistance of its allies in other industries, as well as of Merchants' and Dealers' clubs. Liberty Leagues, Traveling Salesmen's Associations, not to forget the grand effort of the German-American National Association and the hundreds of thousands of liberal-minded citizens allied with it in the



“He was the North, the South, East, West,
The thrall, the master, all of us in one.
There was no section that he held the best
His love shone on impartial as the sun.”

campaign of education and enlightenment. They all have valiantly fought against Prohibition and local option, and the result has been that not only the vote of the Prohibition party was materially reduced, but also that the political intrigues of the Local Optionists and Anti Saloonists were generally unsuccessful as the year approached its termination. . . . It is even probable that laws made to restrict the trade will be rescinded or liberally amended. But, in order that this may be accomplished, it behooves the brewers to continue their political and educational campaign.”

What sort of liberty will the Americans have, the freedom of their forefathers or the “personal liberty” of the capitalistic brewers?



Grammar Lesson

FOURTH YEAR

AIR AND OUR LIVES

Each italicized sentence indicates a fact to be developed by observations or suggestions from the teacher.

Air exists though we can not see it.

Keep a bit of down in the air by fanning it. Lead the children to discover:

1. That the fan does not touch the feather.

2. That the feather is moved by something we do not see.

Let the children name other things they have seen move without seeing what moved them.

We can feel air though we can not see it.

Let the children feel the air when the fan is waved near their faces.

How does it feel when air moves strongly (wind)? Or lightly (a breeze)? On a warm day? On a cold day?

We can perceive air by smell and hearing.

Spray a little perfume about the room while the children have their eyes closed. Let them open their eyes when they think they have discovered something new in the room. How do they know there is a new odor in the room? What carried the odor to their noses?

How may we discover an apple tree in blossom without seeing it? What brought the odor to us? Let the class name other odors they have known to be carried some distance by the wind.

Rustle some pieces of paper by briskly fanning them. What sound resembles it in the autumn when the leaves are dry? What makes the leaves rustle? Name other sounds they have heard the wind make (roaring, howling, whistling, etc.).

Air passes in or out of the nose or mouth when we breathe.

What makes the noise when a boy whistles?

What kind of a noise does a boy make when he has been running hard? When do

boys and girls sometimes make a similar sound? What causes this noise?

Direct each to sit erect and take a deep, full breath. What part of the body moves when we draw in a breath? Illustrate by pressing a rubber ball having a small hole, allowing the children to feel the air rushing out when the ball is pressed; inrushing air may also be felt if the hand is placed *lightly* over the hole. Let the children sit quietly with mouths closed, hold the palm lightly over the nostrils. What do they feel?

We need something that the air contains.

Set a globe of gold-fish in the window. Tell the children to watch and see what they can find out about them. Some child is sure to notice the regular motions caused by the movement of the gills. Call attention to the similar motions of the chest in breathing. What passes in through the gills each time the fish breathe? Why must the water in a fish globe be changed often?

Explain that the fish gets from the water something he must have if he is to live. We call it *oxygen*.

If the water is not changed regularly, the fish uses up all the oxygen in it, and then must have more to keep him alive.

The air, too, contains oxygen which we must have to breathe in order to live.

We breathe into the air an injurious substance we can not see.

Light a short candle and lower it into a deep glass jar. Why does the candle presently begin to burn dimly and then go out. We can see no change in the air in the jar but it is changed. It contains something that puts out the candle.

Take the candle from the jar, relight it, rinse out the jar, and lower the candle into the jar. As soon as the children see it burning there, take it out and let two or three children breathe through glass tubes or straws into the jar. Charge them not to draw the breath in through the tube but through the nose, and then breathe out through the straw into the jar. Presently lower the candle again. Continue until the candle goes out when lowered into the jar. What caused the light to go out? The air in the jar looks the same, but it contains something now that puts out the candle. This something is a poisonous gas given off on the breath of the children who breathed into the jar.

Everyone in the room is giving off this poisonous gas with every breath. If the room were closed up tight there would soon be so much of the gas in the room that everyone would begin to feel tired and suffocated. The same gas that puts out the candle poisons peo-

ple when the air contains too much of it. The candle throws off this gas when it burns and people throw it off while they breathe and live. It is so poisonous that we must not allow it to accumulate in our rooms.

We must live in well-aired rooms.

Where do fish live the better, in a globe or a running brook? Why? How can we get constant change of air and plenty of it?

Tell about the good health of lumber-men, campers, Arctic explorers, who practically live out of doors; about the fresh-air schools and day camps for tuberculous children.

Impress the fact that if one is well protected it is not cold air but bad air that gives him colds.

An article in the *Ladies' Home Journal* on the treatment of certain diseases in cold air will suggest facts which, if properly presented to the children, will impress them with the value of pure air and may be of material assistance in convincing the parents at home of its value.

Discuss with the class the different kinds of rooms in which they live, work, and play each day. Formulate with them simple rules for ventilation by day and by night. With a little practice and enthusiasm their active co-operation may be enlisted in keeping the air of the schoolroom pure, and this practice, too, will bear fruit in home life.

The air is made impure in other ways than by our breath.

Let three or four children in different parts of the room hold lighted candles. At a given signal let them blow out the candles and notice any changes in the air. What caused the disagreeable odor? Let the children name other kinds of smoke that make the air unpleasant to breathe.

Bring out the fact that tobacco smoke in the house or on the street spoils the air for others and frequently makes the smoker a nuisance. What should we think of a man who stood on the street and blew candle-smoke into other persons' faces? Yet the smoker is guilty of just this rudeness.

Appeal to the sense of fair play in the use of air which is intended for the health of everyone. Why should we put garbage in a closed pail outside of the house and have it carried away, or else burn or bury it? Why must we keep sinks and all pails and vessels clean and free from odors?

What rises from the carpet when it is swept with a dry broom, and makes the air unpleasant to breathe? Such dust is not only unpleasant but unhealthful. Give directions for proper sweeping when a floor is bare. When it is covered with a carpet.

Where we breathe.

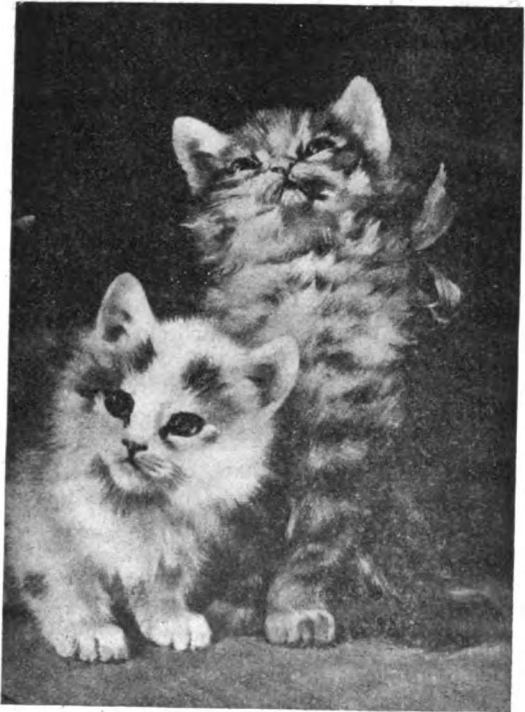
Close the mouth and draw a long breath. Where does the air enter? Where does it go from the nostrils? Can you feel it go any further? Teach the simple names of air passages and organs, leaving detailed anatomy and physiology for higher grades.

Good air and good breathing.

The body gets the air it needs through the help of these air passages and the lungs so we must keep them in good condition.

Do we like to breathe bad-smelling air? Most air that carries unpleasant odors is also injurious to the lungs.

Point out the injury to air passages by smoking and especially by the use of cigarets where the smoke is often inhaled.



Give exercises in deep breathing, training in proper methods of breathing, in walking, running, etc.

Explain very simply the fact that the use of beer, wine, cider, etc., often makes it easier for a person to take the disease, consumption, and that it is more difficult to cure such a person than one who does not use these beverages. Helpful points on the general subject of tuberculosis will be found in *Tuberculosis and its Prevention, Suggestions to Teachers*, issued by the Massachusetts State Board of Education, and *The Cause and Prevention of Consumption*, issued by the Illinois State Board of Health.

GLANCES AT A YEAR'S WORK

BY THE RECORDING SECRETARY, MRS E. L. TRANSEAU

From the 2nd Annual Report of the *Scientific Temperance Federation* presented at the Annual Meeting, December 8th, 1908.*

IN addition to the regular publication of the SCHOOL PHYSIOLOGY JOURNAL, the continuation of the Press Circular, and the publication of leaflets, the especially new outlets opened this year for the dissemination of scientific truths on the alcohol question have been *charts, a stereopticon lecture, public addresses* by the office staff, and channels secured through the *co-operation* of several important organizations.

The *charts*, which were prepared for the World's Centennial Temperance Congress at Saratoga, have been exhibited at several places in Illinois; at Truro, Nova Scotia; St. John, New Brunswick; at the Vermont State Teachers' Association; and at South Framingham and Lake Compounce Chataqua.

Talks with the charts for illustration have been given before various bodies, including the Christian Endeavor, Unitarian Temperance Society, Sunday School Sessions, Tuberculosis Exhibit, Chautauqua gatherings and Church congregations.

Concerning impressions made by the charts, some who have seen them write:

"They present convincing statistics."

"They are the most convincing demonstration of the evil effects of alcohol upon the human family that I have ever seen."

"The exhibition brings facts home to the eye more strongly than in any other way."

"Its educational value cannot easily be estimated."

The *Stereopticon Lecture*, lately completed, has been given eight times and the following statements concerning it have been received:

"It was sane and sound, full of facts presented in an interesting way and free from fanaticism. The pictures added greatly to the value of the lectures."

"Unique in its conceptions, scientific in presentation, beautiful in illustration, it held the wrapt attention of old and young alike."

The records show that Miss Stoddard has made 17 *public addresses* this year. Since her illness a number of her engagements have been filled by the Recording Secretary, Mrs. E. L. Transeau. A number of other appointments are waiting Miss Stoddard's recovery,

and she has been asked by the Committee on Program for the International Anti-Alcohol Congress to be held in London next July, to prepare for that occasion a paper on the Relation of Juvenile Temperance to National Efficiency.

Rev. E. O. Taylor reports that in the capacity of field secretary he has delivered 127 lectures on scientific temperance in which the work of the Federation was explained to a greater or less extent. Of these 9 were given in high schools, 7 before colleges, and 7 in temperance and denominational conventions.

NEW LITERATURE

The new wine and beer leaflets have proved very popular. Over 10,000 have already been ordered since they were issued in October. One correspondent writes: "Every one who reads them is convinced that they are the very best literature we have on the wine question."

The *Press Circular* continues to be a popular avenue for reaching editorial offices. Among the many editors who have asked to have it sent to them regularly are: those of *McClure's Magazine*, *Young People*, *Svenska Tribunen*, *The Housekeeper*, *The Farm Home*, *Literary Digest*, *The Healthy Home*, *Birmingham (Alabama) News*, *School News* and *Practical Educator*, *The Locomotive* and *Engineer's Magazine*, *Deseret News*, etc.

The Secretaries have continued to make contributions to the press, some 60 articles having been prepared during the past year. These are always well received and much more could be done in this line if the necessary time could be found.

AS A SOURCE OF INFORMATION

The information which the Federation undertakes to send to private inquirers frequently makes large demands upon the time of the workers. A whole day or more is often consumed in searching for and in translating and copying the exact information requested. Full charge for the time has never been made for fear it would seem exorbitant. With the return of the small fee asked, appreciation is often expressed by application for membership in the Federation or by letters like the following:

*The scientific section of this report was published in January SCHOOL PHYSIOLOGY JOURNAL

From a pastor:

"Many thanks for your courteous reply to my letter of inquiry and for the literature. It meets my need admirably—indeed it is the most convincing temperance literature that that has come my way for a good while.

"I gladly enclose the price of the literature sent me. It is worth much more. My great regret is that my circumstances do not permit my assisting your organization financially in its splendid work. This is the first time it has been brought to my notice. It seems to me that you are working along the right lines and I wish you a hearty God-speed.

"P. S. Since writing the above I have again looked over the JOURNALS sent me and find much of value on the cigaret evil and how to meet it. I can not too highly commend your periodical. I wish it might find its way every month to the superintendents, teachers, and ministers of the country."

Another from a state official reads:

"Please pardon my delay in not answering your courteous and most satisfactory letter of December 4th. Only business of engrossing character has prevented me from replying although I have been much indebted for the use of the clippings which you kindly sent, in our campaign of temperance in the state. I would like to retain the clippings a little while if agreeable and will return them to you in good condition.

"Enclosed I send you my check for two dollars with a request that I be made an Associate Member of the Scientific Temperance Federation. I trust that later I may be able to make a contribution to the work."

From the publishers of a year-book comes this:

"We are about to prepare matter for the year book of 1909. We realize how valuable we found the matter which has been published by you and how much of it was used in the preceding year book.

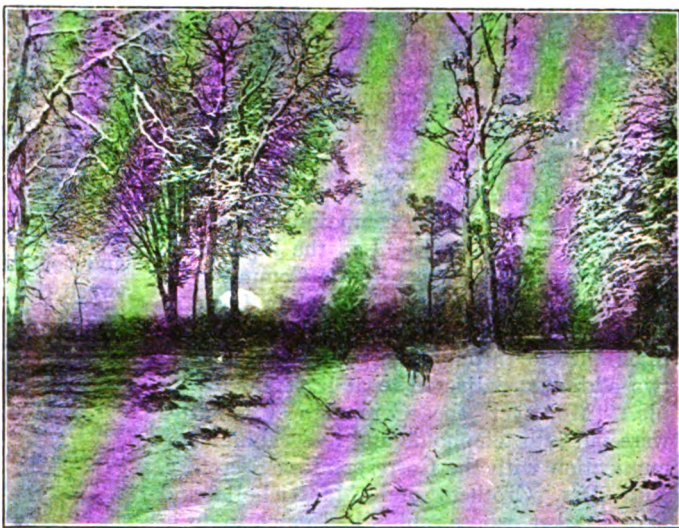
"It will be a favor which we hope may be a business advantage to you, if you will send us perhaps the last six issues of the SCHOOL PHYSIOLOGY JOURNAL together with any matter which you may have on temperance posters in this country."

From the president of one of the state temperance organizations:

"I return the printed matter you sent me on the subject of scientific temperance instruction in the schools, and other temperance questions. I am indeed very grateful for the help received. When one is called to the front to make public addresses, it is necessary to know whereof she speaks."

J. C. Jackson, D. D., Editor of the *American Issue* says concerning this method of furnishing special information:

"I send you herewith check for membership in the Scientific Temperance Federation. I can see great possibilities of influence in the Federation if your ideas are worked out to completion. For one thing, it would be a marvellous relief to me to be able to refer inquirers to such a Bureau of Information. One



of the greatest burdens of my life is the constant stream of inquiries for material for speeches, essays, debates, papers and the like. There are certainly enough coming to this office to require the entire time of at least two able-bodied men.

"To most of them I have to return very inadequate replies if any. Still further, such a bureau would supply us editors with strong, scientific articles from authorized and authoritative sources, bearing upon the scientific aspects of the temperance question. I foresee that the final struggle between the liquor people and ourselves is going to be over the food values of alcohol, its medical uses, and the like. The liquor propaganda has abandoned the moral argument. It is now on the defensive in the economic argument but the empha-

sis is about to be put, according to the statement of the liquor leaders, upon beer as a liquid food; upon alcohol as a tonic and medicine, and upon the general advisability of substituting the lighter alcoholic drinks for those more potent. The final fight, as I have just said, is going to be largely around these propositions, and a scientific temperance bureau can give us just the kind of ammunition needed, *if properly organized and supported.*"

MEETS AN ESSENTIAL NEED

Among the many messages of encouragement that have come to the Federation during the past year are the following:

From J. W. Grosvenor, M. D. "The Federation is doing a grand work and a work that is very necessary. I am greatly interested in it and hope to do something in the future by way of contribution for its support."

From Ernest H. Cherrington, Managing Editor, American Anti-Saloon League Press Bureau: "You are certainly doing a great work which is bound to tell for scientific temperance."

"From Dr. E. O. Taylor: "Last winter during the prohibition campaign in Shreveport, and Caddo Parish, La., the liquor men quoted from the 'Report of the Committee of Fifty' as against prohibition and in favor of moderate drinking. Your Field Secretary replied thereto through the newspapers and in two addresses delivered to at least 2,000 people. Moreover the Campaign Committee were put into telephonic and telegraphic communication with the Corresponding Secretary, with Drs. Crothers and MacNicholl, and Prof. Barker, whose replies had much to do in winning the victory in one of the hardest-fought battles in connection with the prohibition movement in the South."

From Alexander Allison, D. D.: "You will notice in the *Advocate* for October reference to your Federation, as also a free use of your previous circular matter. Having returned this month from a run through Europe from Naples to Holland, I have a peculiar interest, as you may understand, in items from the Continent, the more so when they are so completely, as your paragraphs are, in harmony with circumstances as I found them."

"The great thinkers in the field of science of Europe, are rapidly allying themselves with the temperance reform. There can be no doubt that the field you are occupying is a coming field in a larger sense than has been thought in the past. The people of civilized

lands are being instructed as never before in the real character, and, therefore, the real danger of alcohol."

These and many similar expressions encourage the belief that the Federation is becoming recognized as an organization whose work is preventive rather than palliative and the value of its efforts in the struggle for social betterment is correspondingly appreciated. This appreciation was expressed in the following words at Saratoga last June:—

Resolved, That the Scientific Temperance Federation in collecting and supplying the scientific facts concerning the nature and effects of alcoholic drinks and other narcotics, is meeting an essential need of the temperance reformation, and the World's Centennial Temperance Congress heartily commends the Federation as worthy of the co-operation and support of all temperance organizations and workers."



BUSINESS BANS ALCOHOL

United States Circuit Court, Office of William Vanamee, Receiver—General Order No. 2.

Beginning Christmas, December 25, 1908, hot coffee will be furnished free to motormen and conductors during the winter months between the hours of six and nine in the morning and between six and twelve at night.

Motormen and conductors are expected to abstain entirely from the use of intoxicating liquors.... This regulation applies to the time when the men are off duty as well as to the time when they are on duty. They are never "off duty" to the public.

The use of alcohol while off duty is followed by its effects when on duty.

The motorman who comes to the performance of his responsible duties with efficiency impaired or faculties benumbed by alcohol, already imbibed is a dangerous public servant.... The experiments of Furer, Rudin, Kurz, Kraepelin and Aschaffenburg, as recently summarized by Dr. Williams, show that a single glass of beer involves a loss of ten per cent. in working efficiency.

In the case of trolley or railroad service loss of efficiency means less safety for the public.

Experience has shown that this requirement is a reasonable and necessary one to insure the safety of the public. No motorman himself would be willing to ride upon a railroad train with an engineer who violates it.

WILLIAM VANAMEE,

Receiver of the Wallkill Transit Company.

Travelling Loan Exhibit

— OF —

Attractive, Anti-Alcohol CHARTS

ENTIRELY NEW

For Pupils, Teachers, Professional
People, the General Public

EXHIBIT consists of 25 Colored Charts (framed, size 22 x 28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other infectious Diseases, etc. (See JOURNAL p. 64). No objectionable details. Excellent for No-License Campaigns.

Send for Full Information as to Expense
and Plan for Use.

Scientific Temperance Federation

23 Trull St., - Boston, Massachusetts

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

Purpose, Methods, Advantages, Membership

An Educational Temperance Organization

Purpose.—To make known in every possible way, in popular form, the proven facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

Methods.—The dissemination of facts by the following and other methods: Personal Correspondence, An Editor's Press Circular, Loan Exhibit of Scientific Charts, Popular Leaflets, The School Physiology Journal, A Stereoptican Lecture.

Its Membership

Advantages.—All members receive free *The School Physiology Journal*, notices of useful new publications, samples of leaflets or other information published by the FEDERATION.

Membership.—All who desire (1) to have fuller acquaintance with the alcohol and narcotic question, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance are invited to become members.

All who contribute \$2.00 or more annually are known as *Associate Members*.

All who contribute \$10.00 or more annually are known as *Sustaining Members*.

The payment of \$100.00 or more at one time constitutes one a *Life Member*.

THE SCIENTIFIC TEMPERANCE FEDERATION has a unique place to fill; a distinct message and work. Its aims are fundamental and practical.

Address all contributions, correspondence, inquiries, etc., to THE SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull Street, Boston, Mass.

Combination Journal==Magazine Offers

Almost any Periodical published, furnished with Journal at Reduced Rates.

Let us know what Magazines you want and will make the

PRICE RIGHT

World's Work,	\$3.00	} OUR PRICE \$3.00
Delineator,	1.00	
Altruist or Mother's Magazine . . . . .	.50
Physiology Journal . . . . .	.60

Suburban Life	\$3.00	} OUR PRICE \$3.00
Women's Home Companion	1.00	
or any Class A Magazine		
Physiology Journal, . . . . .	.60

Review of Reviews	\$2.00	} OUR PRICE \$2.60
Success, or any		
Class A Magazine	1.00	
Physiology Journal . . . . .	.60

Delineator	\$1.00	} OUR PRICE \$2.00
Everybody's	1.60	
Physiology Journal . . . . .	.60

TEACHER'S GROUPS.

Normal Instructor,	\$.75	} OUR PRICE \$1.00
School Physiology Journal,60	

Normal Instructor,	\$.75	} OUR PRICE \$1.65
Primary Plans,	1.00	
School Physiology Journal, . . . . .	.60

CLASS A.

Success,	\$1.00	} Any 1 with JOURNAL \$1.15
Woman's Home Companion,	1.00	
American (Leslie's),	1.00	} Any 2 with JOURNAL \$1.80
Our Little Folks, (new)	1.00	
American Motherhood,	1.00	} Any 3 with JOURNAL \$2.50
Primary Plans,	1.00	
American Boy,	1.00	
Altruist, *	1.00	

*Less 15c if this is chosen.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull Street, Boston, Mass.

Please mention the JOURNAL when writing to advertisers.

MUSICAL SELECTION

FOR

WASHINGTON'S BIRTHDAY.

BELOV'D AMERICA.

1. Fair shrine of Lib - er - ty, All na - tions bless thee! Hap - py, thrice
 2. Wise - ly our fa - thers laid Thy broad foun - da - tion; Proud - ly 'gainst
 3. God of e - ter - ni - ty, Fa - ther, O heed us! Thou who our

hap - py we, We, who pos - sess thee! Thine hon - or to main - tain
 kings ar - rayed Shaped thee a na - tion. Now we, their sons and thine,
 guide must be, Truth - ward O lead us! Through us to all make known

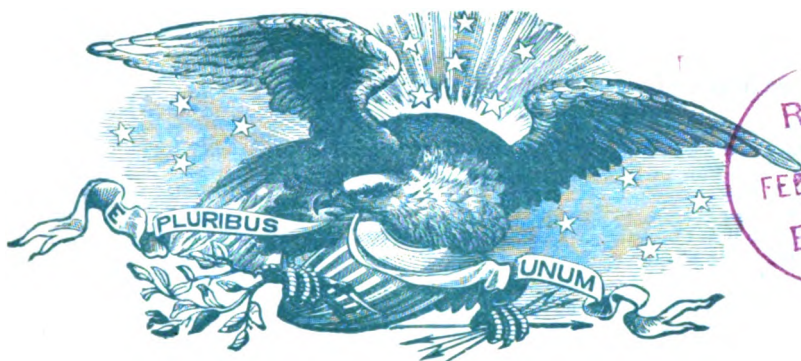
Pledge we de - vo - tion; Strong faith in thee shall reign
 See thy ripe beau - ty, And in our hearts en - shrine
 Free - dom's sal - va - tion, Till man shall God en - throne

'Midst all com - mo - tion, Be - lov'd, be - lov'd A - mer - i - ca!
 Thee, and our du - ty, Be - lov'd, be - lov'd A - mer - i - ca!
 O'er one free na - tion, — Like thee, be - lov'd A - mer - i - ca!

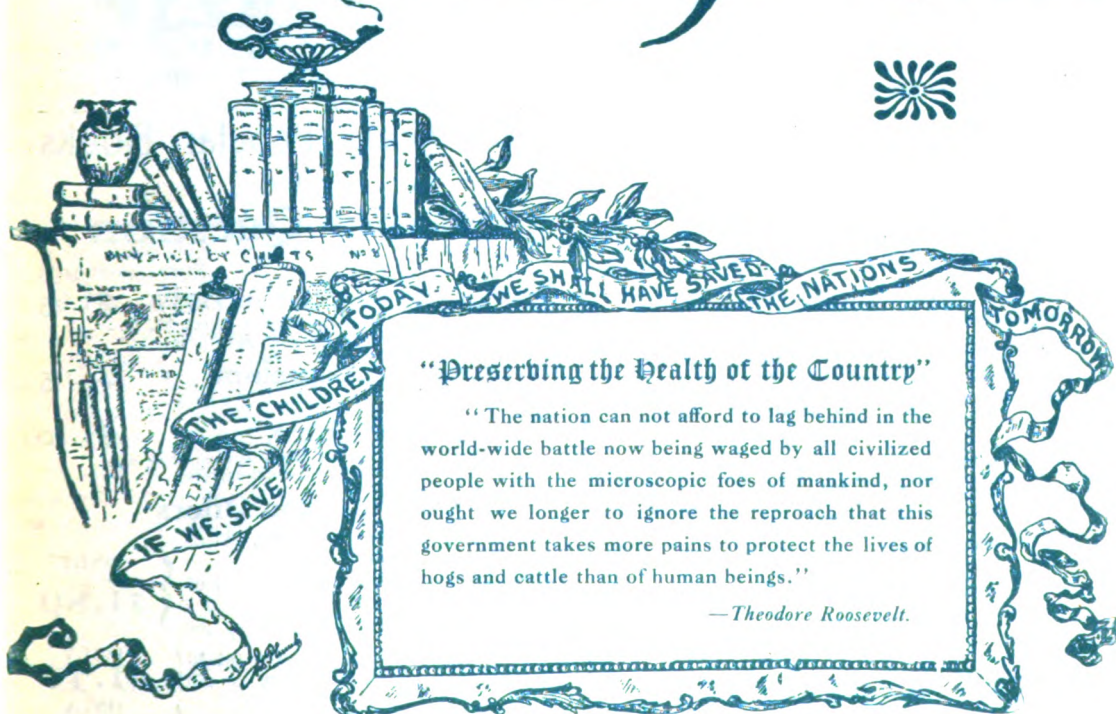
COPYRIGHT, 1894, BY GINN & CO.

Song by courtesy of Ginn and Co., Boston, New York, Chicago.

592



THE SCHOOL PHYSIOLOGY JOURNAL



NATURE BOOKS

Abbott's A Boy on a Farm	\$0.45
Bartlett's Animals at Home	.45
Beebe and Kingsley's First Year Nature Reader	.35
Bradish's Stories of Country Life	.40
Carter's Nature Study with Common Things	.60
Comstock's Wild Flowers which Blossom in April and May	.25
Cummings's Nature Study for Primary Grades	1.00
Dana's Plants and their Children	.65
Hawkes's Trail to the Woods	.40
Holder's Half Hours with the Lower Animals	.60
Half Hours with Fishes, Reptiles and Birds	.60
Half Hours with Mammals	.60
Stories of Animal Life	.60
Kelly's Short Stories of Our Shy Neighbors	.50
Keffer's Nature Studies on the Farm	.40
Monteith's Some Useful Animals	.50
Needham's Outdoor Studies	.40
Overton and Hill's Nature Study	.40
Pyle's Stories of Humble Friends	.50
Stokes's Ten Common Trees	.40
Walker's Our Birds and Their Nestlings	.60

Send for Special Nature Study Pamphlet

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

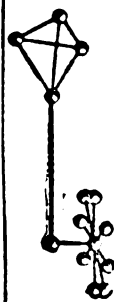
For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy. \$4.00 per Dozen.
\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

ARE YOU A Primary=Kindergarten



Teacher?

Th t is, are you a Primary Teacher who uses Kindergarten material? If not, we presume you expect to do so this term as there are few progressive teachers who are content to have their school deprived of this great advantage. We are the ONLY HOUSE IN THE U. S. putting up Kindergarten material especially for Primary Schools. If you will send for free catalogue now we will send you of charge instructions for using Kindergarten material in primary schools, the regular price being 25 cts. Why not drop a postal card to-day?

Address, J. H. Shults, Manistee, Mich.

CONTENTS

	Page
"Alcohol Prepares the Bed for Tuberculosis,"	97
Scientific Temperance Instruction in Austria,	99
Is the Wine Worth the Price?	100
Trinity Conquers the Weed.	101
Delusions that Are Handicaps.	101
"To the Third and Fourth Generations."	102
The Dynamics of Temperance.	104
Editorials.	106
Dangers in the Use of Beer.	107
Lesson—Advanced Grades—Dynamics of Alcohol.	109
Lesson—High School—Laboratory Studies of Bacteria.	110
The School in Action Against Preventable Disease.	111
Tuberculosis and the Public Schools.	112



Three Great Popular Books

— ON THE —

Alcohol Question

Price, post-paid
Alcohol and the Human Body, \$1.65

By Sir Victor Horsley and Mary Sturge, M. D.
New Edition ready about Jan. 1, 1909.

Psychology of Alcoholism. - \$1.65

By Geo. B. Cutten, B. D., M. A., Ph. D.

The Saloon Problem, - \$1.10

By Prof. J. N. Barker, Best All-round Book on Economics and General Aspects.

Combination Offers

Alcohol and the Human Body,	\$1.65	} ONLY
or		
Psychology of Alcoholism,	1.65	
and		} \$1.80
Physiology Journal, one year,	.60	
The Saloon Problem,	\$1.10	} ONLY
Physiology Journal, one year,	.60	
Three Books and Journal, one year,		\$3.85

Write for prices on any other desired combination.

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

Digitized by Google

School Physiology Journal

Vol. XVIII

BOSTON, MARCH, 1909

No. 7

A Song of Praise

By Elizabeth Roberts MacDonald

For the gladness life has brought,
For the beauties passing thought,
For the song, the dream, the quest
Dawn's clear impulse, evening's rest;

For the lure of Spring that wakes
When the frost's dark barrier breaks,
For the magic voice that calls
Over Summer's viewless walls;

For the memories deeply dear
Passing time but leaves more clear,
For the friendship strong and fine,
For the faith that proves us thine;—

Lord of gladness, hope and dream,
Shadowing cloud and wakening gleam,
Thee we praise, Who dost renew
Love's white fire the long years through!

—*Independent.*

"ALCOHOL PREPARES THE BED FOR TUBERCULOSIS"

BY ANTON WEICHSELBAUM

Professor of Pathological Anatomy, University of Vienna

THE existence of a causal relation between alcoholism and tuberculosis was believed in a long time before the discovery of the tuberculosis germ. French and English physicians, particularly, had expressed the opinion that chronic alcoholism was one of the chief causes of tuberculosis. After the discovery of the bacilli, they were considered by many authors to be almost if not quite the sole cause of the disease. The possibility that other factors might enter in were scarcely taken into consideration.

Later, however, the idea gained ground that in all infectious diseases, and, therefore, in tuberculosis also, a very important part is played not only by the special germs which are the exciting cause of the disease in question, but, also, by a number of factors which are included under the term "predisposition."

We know, for instance, that the organism has at its disposal several means of defense, or protection which are able to hinder the invasion or multiplication of the germs that give rise to disease. The smaller the number and efficiency of these protectors at the time of exposure the more easily the disease is contracted.

Numerous experiments have shown us that one can so diminish the efficiency of the natural resistance of animals by the administration of various poisons that they become infected by certain disease germs much more easily than do animals that have not received those poisons. Observations on men have shown that the results obtained from the animal experimentation holds good, also, for the human organism.

*From a lecture reported in *Der Abstinenz* (November and December, 1908).

From these findings as well as from the scientifically established fact that alcohol is a poison for the body, because it is capable of injuring more or less the protoplasm of the cells, we can safely conclude that the use of alcohol makes the body more susceptible to tuberculosis; that every person who drinks alcoholic liquors will, when exposed to the germs of tuberculosis, take the disease sooner than those who, other conditions being equal, use no alcohol.

EVIDENCE RATHER THAN INFERENCE

Among the patients received in hospitals for tuberculosis, various authors have reported a much higher percentage of alcoholics, than of non-alcoholics. Evidence shows that those engaged in the liquor traffic are more frequently attacked by tuberculosis than others. For instance, Fircks in 1897 found tuberculosis in over 50 per cent. of hotel waiters; Destree and Gellemaertz found it in over 66 per cent.; and Tatham found the death-rate from tuberculosis in waiters over 25 years of age to be two and one-half times as high as in men of other callings.

Whether one admits from these statistics a larger or smaller percentage of tuberculosis due to alcoholism, he can not ignore its influence. The experience of many countries having a high consumption of alcoholic liquors shows the same connection. According to Lavarenne those departments in France which have the highest consumption of alcohol have also the highest rate of deaths from tuberculosis. In Normandy and Brittany tuberculosis did not begin to spread until after the consumption of alcohol increased. Among the negroes, tuberculosis increases with

drunkenness; the Chinese who use little alcohol and otherwise live not very hygienically have, according to Martin, less tuberculosis than Europeans. Hoppe shows a relatively lower rate of tuberculosis among the Jews than among those who drink less moderately.

DIRECTLY INCREASES SUSCEPTIBILITY

We have also the results of exact experiments upon animals to show the direct influence of alcohol upon the origin of tuberculosis. The leading researches in that line are those of Prof. Laitinen who studied the influence of large and small quantities of alcohol on tuberculosis infection. The amounts he used in his earlier experiment corresponded to the daily use by man of one and one-half litres (quarts) of beer. The experiments were performed in such a way that the animals either received a definite quantity of alcohol daily for a long time and were then compared as to their susceptibility to infection with the bacilli of tuberculosis with other animals which had received no alcohol, or, they were first infected with the bacilli of tuberculosis and then a part of the affected animals were given alcohol daily while the other part received none. It was found that the animals which had received no alcohol either lived longer than the alcoholized animals, or, if the amount injected was very small, only a few died, while of the animals which had received alcohol either all or a large part of those infected with tuberculosis succumbed.

Laitinen studied farther, what is particularly important for our question, the influence of very small doses of alcohol corresponding to only 200 centimeters (about a tumblerful) of Finnish beer for man, upon the resistance of the progeny of alcoholized animals. He found that 36.76 per cent. of their young were either born dead or died soon after birth, and only 63.24 per cent. remained alive, while of the progeny of the non-alcoholized only 21.74 per cent. were born dead and 78.26 per cent. were viable.

Similar results were obtained by Achard and Gaillard with guinea pigs. Those that received alcohol and were afterwards infected with tuberculosis lived from 63 to 76 days while those that had not received the alcohol lived on an average 174 days.

The results of the previously cited experiments on the influence of alcohol upon infection with tuberculosis germs is in complete harmony with the results of animal experiments that have been performed by a number of investigators to ascertain the predis-

posing role which alcohol plays in various acute infectious diseases such as cholera, splenic fever, hydrophobia, tetanus, diphtheria, etc. That is, it has been found that very small amounts of alcohol considerably increase the susceptibility to all these infections. But before the publication of these experimental results, clinical observation on men had taught that the drinker is much more susceptible to those diseases than the total abstainer.

If, then, alcohol increases the predisposition to various acute infectious diseases, it would certainly be very strange if it did not act similarly in the case of tuberculosis.

IT HASTENS THE END

Alcohol not only predisposes to tuberculosis, but it also influences unfavorably the course of the disease. This conclusion is sustained in the first place by the above-mentioned experiments of Laitinen as well as those of Achard and Gaillard in which the animals which had been first infected with tuberculosis and then given alcohol for a long time die sooner from tuberculosis than the controls; and, in the second place, from the numerous clinical observations on men showing that tuberculosis in drinkers runs a swifter and more severe course than in abstainers. There are, to be sure, contrary opinions as, for example, the belief that the influence of alcohol upon the course of tuberculosis is not only harmless but even favorable. Nevertheless, numerous voices are raised against this, and Dettweiler agrees that a long-continued employment of alcohol is not without danger.

IMPORTANCE OF INDIRECT INFLUENCE

We have so far considered only the direct influence of alcohol upon the origin and course of tuberculosis. Of no small importance, however, is the indirect influence which takes into consideration all the social evils which are brought about through the use of alcohol.

In this connection comes the fact that the cost of the alcoholic drinks used cuts down the amount to be spent for good and sufficient food, for hygienic dwellings and clothing, which is particularly important for the poor people, and not only for the drinker himself but also for his family. The curtailing of expenditures for proper diet favors also the general erroneous belief in the nutritive value of alcoholic drinks, particularly beer. That these conditions favor the origin and spread of tuberculosis is becoming slowly established.

Moreover, the places in which the lower

classes meet to drink are usually smoky, poorly ventilated, and often in bad localities, and yet, notwithstanding these wretched conditions they seem more inviting to the hardened drinkers than their own dwellings.

Again, the more the sensibilities of the habitual drinker become dulled, the less attention he pays to hygienic rules, and therefore fails to protect himself against tuberculosis infection.

Finally, the continued use of alcohol exerts another indirect influence in predisposing to tuberculosis by reducing the resistance of the drinker's descendants against the infection of various diseases, tuberculosis included. This is a matter of special importance because we now believe that the foundation for tuberculosis is in most cases laid in childhood. Experience teaches, also, that the children of

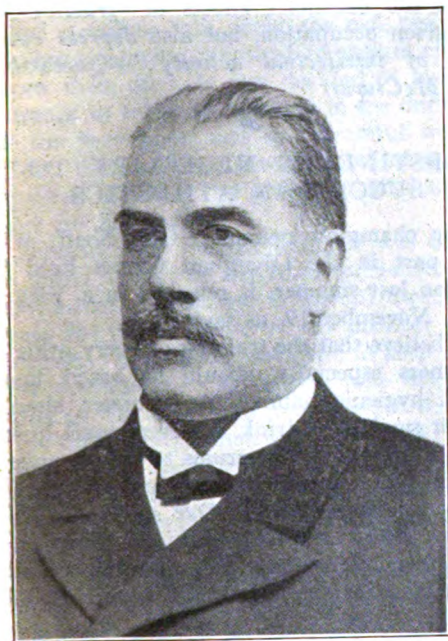
from all institutions in which tuberculosis patients are treated or cared for, and its use as a medicine reduced to the minimum. The same requirement should also hold in the treatment of other patients and inmates of public institutions.—*Translated for the SCHOOL PHYSIOLOGY JOURNAL.*

SCIENTIFIC TEMPERANCE INSTRUCTION IN AUSTRIA

READERS of the JOURNAL will remember a recent article on the importance of anti-alcohol instruction in the schools written by Miss Julie Kassowitz, Ph. D., daughter of Prof. Kassowitz of the University of Vienna. Since her visit to this country she has been working assiduously to acquaint the Austrian people with the American system of temperance instruction and for the introduction of the subject into the Austrian schools.

A letter just received from Dr. Kassowitz says that the cause of anti-alcohol instruction in the schools is making progress, although it has not yet reached a very great magnitude. She reports that the Austrian Abstinence Teachers' Association is working for an improvement in the school books in regard to the subject of alcohol. They have secured the introduction of anti-alcohol matter in some school text-books, and while it is yet much too small in amount, and not always from the abstinence standpoint, it is a beginning. Since Dr. Kassowitz' visit to America she has spoken frequently on the subject and interested influential people by lending them the *New Century Physiologies*. Among those who have thus become interested is Dr. Alice Masaryk of Prague, the daughter of the well-known Professor Masaryk of Prague University. Dr. Masaryk is preparing to translate the books into the Bohemian language, and a public school teacher in Vienna has already begun a translation of the same into German. Difficulty is expected in finding a publisher because the study is not yet obligatory in the present curriculum.

Last October the anti-alcohol societies of Austria held a Congress in Vienna during which the president of the Abstinence Teachers' Association, Principal Lang, Dr. Kassowitz, and Dr. Masaryk spoke in favor of instruction in the schools upon the American plan. A resolution indorsing the same was passed. While it is not probable that the government officials will make such a change at present, it is hoped that something may be done by special teachers going from school to school.



PROFESSOR ANTON WEICHSELBAUM
University of Vienna

drinkers are very frequently consumptive.

The conclusions, therefore, that may be drawn from our considerations of the influence of alcohol upon tuberculosis are:

1. That in order to resist tuberculosis successfully, it is absolutely necessary that we energetically oppose the prevailing drinking customs, and in this, abstinence is decidedly preferable to mere moderation.

2. It is the duty of physicians and all officials charged with the care of the public health to fulfil the above named conditions and to support them by their own personal example.

3. Alcohol as a relish should be banished

IS THE WINE WORTH THE PRICE?

BY HENRY SMITH WILLIAMS, M. D., LL. D.

PROFESSOR JAMES says that, 'the reason for craving alcohol is that it is an aesthetic even in moderate quantities. *It obliterates a part of the field of consciousness** and abolishes collateral trains of thought'."

German scientists including Exner, Dietl, Vintschgau, and Kraepelin and his pupils have found that except immediately following the ingestion of very small quantities of the drug, the *reaction time* was always *lengthened*.

Choice reaction time:"Other experiments tested mental processes of a somewhat more complicated character. For example, the subject would place each hand on a telegraph key, at right and left. The signals would then be varied, it being understood that one key or another would be pressed promptly accordingly as a red or white light appeared. It became necessary therefore to recognize the color of the light, and to recall which hand was to be moved at that particular signal; in other words, to make a choice not unlike that which a locomotive engineer is required to make when he encounters an unexpected signal light. The tests showed that after the ingestion of a small quantity of alcohol—say a glass of beer—there was a *marked disturbance of the mental processes* involved in this reaction. On the average, the keys were released more rapidly than before the alcohol was taken, but the wrong key was much more frequently released than under normal circumstance. *Speed was attained at the cost of correct judgment*. Thus, as Dr. Stier remarks, the experiment shows the elements of two of the most significant and persistent effects of alcohol, namely, the vitiating of mental processes and the increased tendency to hasty or inordinate movements. Stated otherwise, a levelling down process is involved, whereby the higher function is dulled, the lower function accentuated.

Some experiments conducted by Furer are illuminative as to [the persistency of the effects of single doses of alcohol]. He tested a person for several days, at a given hour, *as to reaction-time, the association of ideas, the capacity to memorize, and facility in adding*. The subject was then allowed to drink two litres (quarts) of beer in the course of a day. No intoxicating effects whatever were to be

discovered by ordinary methods. The psychological tests, however, showed marked disturbance of all the reactions, not merely on the day when the alcohol was taken but, also, on succeeding days.

"The development of the fear psychosis, in a modified degree, through the continued use of small quantities of *alcohol*, emphasizes the causal relation between the use of alcohol and *the genesis of timidity*. It shows how pathetically mistaken is the popular notion that alcohol inspires courage; and, to anyone who clearly appreciates the share courage plays in the battle of life, it suggests yet another lamentable way in which alcohol handicaps its devotees.

"Dr. Abel summarizes many experiments thus: 'One half to one bottle of wine, or two to four glasses of beer a day, not only counteract the beneficial effects of *'practice'* in any given occupation, but also *depress every form of intellectual activity*.'"—Quotations from *McClures*.

ABSTINENCE NECESSARY TO
SUCCESS IN ATHLETICS

The champion swimmer, Otto Sheff, who took part in the Olympian Games held in London last summer, is reported in a Vienna daily, November 19, as saying:

"I believe that the training of every athlete, swimmers especially, should be based upon sound hygienic habits. A swimmer should neither smoke nor drink, for even small quantities of alcohol are injurious to the organism. I believe also in regular sleep and exercise."

The above is cited in *Der Abstinents*, December, 1908, as recent additional proof, derived from actual practice, that the highest efficiency in athletics is attained only by abstinence.

Bobby's mother was often distressed by his lapses from correct speech, all the more because his school reports were always good.

"Bobby," she said plaintively, one day. "why do you keep telling Major to 'set' up when you know 'sit up' is what you should say?"

"Oh, well, mother," Bobby answered hastily, "of course I have lots of grammar, but I don't like to waste it on Major when he doesn't know the difference, being a dog."

Men who are not young now will live to see the day when there will not be a single saloon in any land where men go to church and children go to school.—Carmack

*All italics ours; placed for teachers' use.

TRINITY CONQUERS THE ALLURING WEED

BY ARTHUR WALD

Professor of Latin, Trinity College, Round, Rock, Texas

LOVERS of the boy everywhere can not but rejoice over the victories scored by the vigorous anti-cigarette campaign of the past few years in the passing of prohibitive laws by several North Central states.

In Texas, where cigarette smoking is much more prevalent than in the Northern states, little if any organized effort has until recently been made to fight the evil. But a beginning has been made and a campaign launched which we dare to hope will, under God, finally deal the death-blow to the cigarette in Texas.

The Anti-Cigarette League of Trinity College, at Round Rock, was organized last January by a half dozen of the students, who, after a serious talk about the evil results of smoking cigarettes, promised to abstain entirely from their use. It was decided to make an attempt to enlist all the boys in the dormitory in the movement, and so successful was the effort, that, within a few days, all except two or three of them, and several others had been won for the cause.

Almost from the beginning it was decided to make a fight on all forms of tobacco. It was agreed to impose a fine of twenty-five cents for every offense by any member of the League. Everything was done to keep up the first enthusiasm. An appeal was constantly made to the honor and manliness of the boys. For three weeks meetings were held every evening on the campus, but later it was deemed advisable to have them less often, and finally they were held regularly once a week.

That the fight would be a hard one was realized from the beginning, and a hard fight indeed it was. With temptations almost on every hand, it means a struggle even for one who has not acquired the habit, to remain true to his pledge. Often the issue seemed doubtful, but the victory was won at last, and the cigarette was banished from Trinity.

Realizing the blighting influence of this evil

on school life, the iron strength of the bondage in which it holds its victim, and the strange allurements of its temptation to the boy, I regard this successful campaign against it as a most significant victory.

In figures, indeed, the results may not seem remarkable. And yet it means not a little that some forty boys have signed the pledge. Not all it may be, will remain true to their promise, but among them are some who are devoted heart and soul to the cause and who will in the future be its most ardent champions.

Under the auspices of one of the literary societies at the institution, programs have twice been rendered by the Anti-Cigarette League, on each occasion an address being delivered by a prominent speaker, who, true to the opportunity, did not fail to aim well-directed blows at the cigarette. In this way and by the distribution of literature, sentiment has been created and numerous friends won for the cause.

That is the great need—a campaign of education. When our work was begun we were not aware of the existence of the National organization, to which we are now auxiliary, nor did we know of any literature on the subject. The *Boy Magazine*, together with the other literature published by the National League and some secured from other publishers came as a God-send to us.

While we must continue our work of trying to save those who have become victims of the evil, and of persuading others from coming under its bondage, yet the ultimate aim must be finally to secure prohibitive legislation. To save a hundred boys by pledging them to abstain is well, but to remove the temptation from thousands of them is better. In Texas, with its large Mexican and negro population so sadly addicted to the habit, it will mean a fight of years and years. But the cigarette *must* go. This is a struggle for a great and noble cause, and it shall, it must, go on to final victory.—*Boy Magazine*.

DELUSIONS THAT ARE HANDICAPS

AT THE International Anti-Alcohol Congress held in Buda-Pesth in 1905, Dr. Mitander of Förlinge, Sweden, read a paper on "Alcohol and physical working ability, with special reference to military training." He reviewed the various experimental investigations which have disproved the old ideas that alcohol aids physi-

cal and mental work, cited the well-known polar and tropical expeditions in which alcohol was clearly shown to act as a detriment to resistance and endurance; and added to these, personal experiences of his own.

For a number of years he was a member of a volunteer rifle company in Sweden which held shooting matches occasionally.

At first it was quite a common practice for the men to take brandy both before and during the exercise, but after a time they found that they derived no benefit from it and gave it up. From 20 to 30 grams of alcohol, corresponding to a glass of brandy, began in about ten minutes to effect the brain so that the man instead of being calm and steady lost control of his muscles. As target-practice puts the whole nervous system on a tension, calmness and self-control are indispensable in order to secure good results.

In the discussion which followed the paper, Dr. Ignez Kemeny, of Buda Pesth, related his experiences with troops marching from a cool, elevated region down to a plain, one very hot day, where during the last hour of the march, the men began to fall with exhaustion. This first directed his attention to the bad effects of alcohol in the army; the men who died from the heat were all notorious drinkers; those who were rendered unfit for service and had to go to the hospital for a long time were all drinkers who were called "moderate" but who drank "more than their systems could stand".

An example of the effects of alcohol upon the opposite extreme of temperature was also cited by the same army surgeon.

One very cold night, five soldiers who had been celebrating a holiday started for their homes, a distance requiring three or four hours to cover. Only one reached home, and he was an abstainer. An alarm was raised and search made for the others. One was frozen to death when found; the others were so frost-bitten that one had to have a foot, the others, a hand, amputated. These were all drinkers.

Following the army surgeon, Dr. Forel explained the principle involved in the deceptive effects of alcohol upon both temperature and working ability. He said: We have been speaking of the effects of alcohol upon muscle work and in the discussion have included railroad service, which of course includes mental as well as muscular work. But the

physical and mental are not separate things; they are in reality united in the brain. Both brain and muscle are involved in physical work; both belong together for the muscle is innervated from the brain.

All the experiences with regard to abstinence which have been cited here show that the total abstainer far exceeds even the moderate drinker in continuous muscular work. I wish to emphasize this point because it is of great importance in that kind of work. We see this particularly in such sports as cycling, rowing, and long distance running. A man must be entirely abstinent in order to reach his highest efficiency.

The speaker has just shown how drinking men in the army suffer sunstroke upon the marches, in hot weather, and become frozen in cold weather. And yet men are continually saying that alcohol is so warming when it is cold and so cooling when it is hot. How can the same substance both warm one and cool one? It is so cooling that the one cooled suffers sunstroke and so warming that the man warmed is frozen upon the streets.

It is very clear that we have here a subjective illusion. And this illusion is due to the fact that our sensibilities are deadened by a narcotic poison.

For instance; my hand comes too near a burning coal. I feel pain, which is a good thing, for I draw my hand away and avoid being burned. But if I am deceived and feel nothing unpleasant, if my hand does not pain me, I let it remain and it is burned. It is the same way with cold. One feels neither the severe heat nor the severe cold because his whole feeling-apparatus is benumbed. That explains the inconsistency. For that reason a man is frozen or over-heated without perceiving it.

It is the same with alcohol and muscle work. The man is made weaker but he is also benumbed, hence he does not feel the fatigue. That gives him the idea that he has been strengthened.—*Translated for THE SCHOOL PHYSIOLOGY JOURNAL.*

“TO THE THIRD AND FOURTH GENERATIONS”

From a Report made by Dr. Ranler to the Academy of Medicine of Paris

ALCOHOL does not strike simply the individual who drinks; it does not simply abbreviate life. Like syphilis, it strikes the descendent, and sometimes more severely than those who drink and live.

In all that has been said about alcoholism, emphasis has been laid upon the mental troubles of the children of alcoholics, the

deterioration of all kinds, the lesions of the nervous system; but it has not been made sufficiently clear that if alcohol causes tuberculosis in the drinker it also gives rise in the family of the drinker to diminished resistance, to infection in his children, they being sometimes attacked while the father, the cause of the trouble, remains immune.

This is martyrdom for the poor beings whose only crime is being born of a father who drinks.

One has but to cite for instance, a consultation in the workmen's quarters by Levallois-Perret. There children from the age of two to fifteen are subject to white tumors, to Pott's disease, to water around the knee, all of which are becoming every year more numerous. But of especial interest to me was the inquiry into the heredity of these children. I am often astonished by the good physical appearance of the mother, examination of whom shows no tuberculous indication, a striking contrast to the debility of the child. When this negative examination is ended I ask about her husband and am told that he is also healthy. I investigate to find if this is a fact. He is a workman, often a coachman, or mechanic. I end by asking if he drinks. Then how many times I have heard the answer: "Ah! Monsieur, it is his only fault."

I attended one family in which were two children, one having Pott's disease, the other hip disease. The mother was healthy, the daughter of a father and mother of robust health who had never suffered from lung trouble. The father had died of tuberculosis. Evidently the tuberculosis of the children came from the father. But one of the parents of this father lived to be seventy-five, and the other sixty-seven years old. Whence, then, came this tuberculosis which had destroyed the father of my two small patients in a family of people who appeared to be sound and resistant? I must learn the habits of the grandparents.

On the mother's side the grandparents were sober, but on the father's side the old man, sixty-five years of age, had been a hard drinker. He had always drunk a great deal. Water and he were strangers, but one appetizer followed another. He had resisted this inveterate alcoholism, but his son, who had always been sober, was paying for the father the tribute of tuberculosis, and his two little children were also victims. Some time after, one died of hip disease and the other of tuberculous meningitis, and as I stood by his death-bed, this grandfather came to me and asked: "Why is it that with parents in such vigorous health the children were so feeble?"

I confess that having helped this poor mother through so many years of suffering on account of these two frail children I was moved with emotion and with a feeling of repulsion for this conscienceless man and I exclaimed:

"You have drunk too much, Monsieur."

I had another case of an unfortunate child

attacked by Pott's disease whose father and mother were not tuberculous. All the family were healthy, but the father was a drinker of "aperitifs" and of all other alcoholic liquors.

I had another case, a giant who became a saloon keeper with a prosperous trade, but he drank, and in ten years when he was not more than forty-seven, he was in the last stages of consumption. He died and his wife, a strong woman, was also attacked and died five years afterwards leaving two children, both tuberculous. Here we have a whole family that disappeared on account of alcohol.

I might cite many other cases equally conclusive. It is sufficient to say that if one makes a systematic investigation of alcoholic antecedents in a family, one is astonished to see the numerous cases of infantile tuberculosis which have no other origin, tuberculosis which decimates children of tender years.

In the presence of these poor, weak chil-



dren, victims of the vices of their parents, before the pain of these mothers who with suffering hearts carry in their arms their sickly children, one has a feeling of indignation toward those who in the exercise of their power could prevent all this by putting a check upon this alcoholism and who hesitate to do it, obedient to the particular interests of those who put these interests before those of society and country.

Again look at a Sunday in a small town in Brittany, the country where alcoholism for many years has been making its victims. Behold the gaunt faces, the emaciated, deformed bodies, a startling number of whom stumble along followed by a crowd of deformed, crippled children, and you will have an agonizing vision of the terrible havoc which alcohol has wrought upon the race.—
Translated for the PHYSIOLOGY JOURNAL.

THE DYNAMICS OF TEMPERANCE

ALCOHOL CLOSES BUSINESS OPENINGS

The United States Census Reports for 1897-8 show that out of 6,792 employers of labor interrogated, 3,527, or more than fifty per cent., now make some requirement as to abstinence, and more than 1,284 of the latter require total abstinence on or off duty. That was a decade ago and this percentage is undoubtedly greater today.

GENERAL REASONS WHY ALCOHOL IS TABOO

The leaders of the German chemical industry recently sent out to their constituencies a circular containing the following:

"We urge our members to use every opportunity to set before their workmen the disadvantages of the use of alcohol. Among these are the useless expenditure of money, the weakening of their own health and that of their children, and the consequent diminished resistance to disease; the greater liability to accidents among men who are not total abstainers, particularly among machines; the earlier invalidism and the diminished income. We urge our members to oppose the use of alcohol by all means.—*Die Alkoholfrage* (September, 1908.)

BEER "WITH MEALS" CAUSES ACCIDENTS

The Western Electric Company of Chicago has forbidden its workmen from drinking beer on the company grounds. Careful investigations demonstrated that a large number of accidents occurred uniformly after lunch and in almost every case the victim had taken beer with his lunch.—*American Issue*.

ALCOHOL CAUSES WASTE OF TIME

The great inroad made upon the time and therefore upon the wages of workingmen, by the use of alcohol, is suggested by some statistics secured by Dr. Rosemann in the course of an investigation of accidents in one of the mining districts of Austria. The statistics for the five years, 1899-1903, show that the average amount of wages lost by the workmen on account of "unnecessary and unexcused" absences from work on the day after an ordinary working day was 2.5 per cent.; on the day succeeding advance payment of wages it was 6.3 per cent., and after the regular pay day 7 per cent.

DESTROYS CAPITAL AND OPPORTUNITY

"Three drinks of beer a day in twenty years, at compound interest would equal over \$2,200. A young man with that could purchase any lot in your city; not pay all down, but people would trust him, because of his temperate, industrious habits. The drinker would not have the money nor reputation of the temperate man."—*E. L. Eaton, D. D.*

Ralph Blaisdell, auditor of the Harriman lines in the Northwest, has just issued an order forbidding all employees in the auditing department from entering saloons for any reason, whatsoever. The reason given by Mr. Blaisdell to his employees in explaining the order, is that total abstainers are uniformly considered more efficient than those who tittle even on a small scale; that they are more prompt and accurate, and rise with greater rapidity; and in general are more useful around the office.—*American Issue*. (Jan., 1909.)

GREAT DANGER OF HABIT-FORMING

Richard Mansfield is said to have been one of the most abstemious of actors, having long ago banished alcoholic liquors from his dressing room. When asked the reason he said he feared the growth of the habit. "I am indulging myself now in an innocent half pint. I am depending on it for the nervous energy for my big scenes. Soon that will be impotent, and I will need a full pint, then a quart, then brandy, then—but, don't you see, I must stop it. I intend to play on the nerves and energies Nature has given me or not at all." He said that often, in acting a particularly heavy role, he took food, never alcohol.—*N. Y. Mail*.

ALCOHOL PAVES WAY TO DEFALCATIONS

The Superintendent of the Western division of the American Express Company at Omaha, says:

"We find that almost every defalcation has its beginnings in drinking. If we find a man drinking when off duty he is warned. The second time he is discharged. If we find him drinking on duty he is discharged. The drinking even when off duty often leads to gambling and other bad habits, and the next thing there is a defalcation. Our men must not drink even when off duty."—*Boston Journal* (June 30, 1908).

DICTUM OF REPRESENTATIVE INDUSTRIES

The Baltimore and Ohio Railroad is added to the list of corporations which prohibit the use of intoxicating liquors by their employes at any time, whether on or off duty. It is understood that this rule has the assent of railroad managers generally. On the whole system of the New York Central lines, which includes the New York Central and Hudson River, the Lake Shore and Michigan Southern, Michigan Central, The Big Four, The Nickel Plate, The Boston and Albany and other roads, all the employees are forbidden the use of intoxicating liquors. If a conductor knows that the engineer of his train has been drinking he is requested to report him, and not to allow the train to start until a new engineer has been provided. The same duty is imposed on the engineer as regards the conductor.—*Watchman*.

GRENFELL, SHIP-MASTER

Dr. Willard T. Grenfell, who for many years has been among the deep sea fishermen off the coast of Labrador says:—

"Why don't I want to see liquor used at sea? Because when I go down for a watch below I want to feel that the man at the wheel sees only one light when there is only one light to see; that when the safety of the ship and all it carries depends on the cool head, the instant resolve and the steady hand of the helmsman, there is not standing there in place of the man, the poor, debased creature that all the world has seen alcohol create—even out of such gifted men as Burns and Coleridge and hosts of others.

"I have seen ships lost through collision because the captain had been taking a 'little alcohol'."—*Home Guards*.

"KING OF THE AIR" ABSTAINS

A French paper, *Le Bien Social*, (December, 1908), contains the following information concerning Mr. Wilbur Wright:

The editor of *L'Etoile Bleue*, an anti-alcohol paper published in Paris, has asked Mr. Wilbur Wright to state his attitude toward alcoholic drinks. Mr. Wright is the American who for a number of months has been making experiments in aerial navigation, and because of his wonderful record has come to be called "The King of the Air". Because a man has need of all his self-control and of all his mental clearness in the management of such a complicated machine, the editor was curious to know what he drank. Mr.

Wright responded as follows:

Dear Sir:

In answer to your letter of the 11th, it is true that I never make use of alcohol because I believe that it can do me no good, and I believe that most people would find themselves better off if they did not take it.

(Signed) WILBUR WRIGHT.

"It is to be noted", says the editor of the paper reporting this incident, "that according to American usage Mr. Wright means by alcohol all alcoholic drinks, distilled liquors, wine and beer. He has many times refused gifts of Bordeaux wine from the proprietors of French vineyards. Surely total abstinence is not confined simply to foolish fanatics."

HANDICAP ON PROFESSIONAL LIFE

In a recent discussion in the Norfolk, England, United Council, Sir Victor Horsley, speaking in the name of modern science said among other things that without doubt or uncertainty, that the judge who drinks intoxicants is affected to a larger or less degree in his mental processes thereby; that the physician is less accurate in his judgments; that the business man is more or less intoxicated; that the laborer is to a greater or less degree narcotized. In short that there is absolutely no such thing as perfect balance of either physical or mental operations for the user of strong drinks, even though he use them "moderately." He may not be conscious of his aberrations; others are more apt to be; nevertheless the aberrations are there. It is declared that judges particularly suffer in the more accurate parts of the faculties, and that their decisions are always more or less vitiated by the drink habit if at all dependent upon a highly critical judgment.—*American Issue*.

THE BUSINESS OF RULING NATIONS

Pursuing a policy of personal reform, the German Kaiser has become a teetotaler pledging himself to abstain from all alcoholic drinks.—*American Issue*.

"Comment was made at a small dinner last night on the fact that Mr. Taft's wine glass was turned down.

"'Yes, and it's going to stay turned down,' he said, 'I am not going to drink anything again ever.'

"'You never did drink enough so that any one could notice it,' said a boyhood friend present."—*Chicago Tribune* (Nov. 28. 1908).

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

THE PHILOSOPHY OF TEMPERANCE

I gave a beggar from my little store
Of well-earned gold. He spent the shining ore
And came again, and yet again, still cold
And hungry as before.

I gave a thought, and through that thought of mine
He found himself a man, supreme, divine,
Bold, clothed, and crowned with blessings manifold,
And now he begs no more.
—International Good Templar.

LIFTING THE ECONOMIC BURDEN

A LETTER came to the JOURNAL office recently asking what books treated the alcohol question from the sociological as well as from the individual standpoint.

The fact that such a question arose shows that doubtless there are teachers who could create interest and perhaps enthusiasm among their pupils by treating the alcohol question from the standpoint of social welfare. The difference between the obligations of the hermit and of those who share the advantages of community life; the burden imposed upon the members of a community when one of their number becomes incapable of self-support; the additional burden when his family must be cared for by others; the loss of his productive labor; the growth of the burden with every additional member of this kind; and then the lowering of the moral standard when such a character becomes an object of imitation to the young—would all enter into such consideration.

The class in civics can be taught rightly to estimate the peril that voters of low ideals offer to a government of the people, and thus to see that habits that tend to degrade are to be opposed on the ground of patriotism.

In the same connection comes a proper appreciation of moral courage, the true bravery of the boy who dares to stand, even if he must stand alone, against the pernicious drinking customs which are a menace to the best interests of his country.

Boys admire the courage of the soldier who shoulders his gun and marches into physical danger to keep back an invading enemy. Let them admire even more the moral hero who stands unflinchingly before denunciation or ridicule for the sake of driving out an enemy already within the borders, an enemy that menaces character.

Enlist the young people in the anti-alcohol movement, not only as personal abstainers, but as public-spirited champions of the women and children whose lives are crushed by the drinking habits of husbands and fathers; of the boys and girls who will fall victims if they are not warned, encouraged, and led away from the temptation to begin tampering with wine and beer.

A HEALTH DAY

IT WOULD doubtless be a good thing for communities in which there is lack of interest in the subject of physiology and hygiene in the public schools, if the suggestion of Professor Willis H. Bocock, of the University of Georgia, concerning a "Health Day" could be carried out. He proposes that "one day of each school year be set apart by the school authorities of the whole state to be celebrated as "Health Day", and to be devoted to the instruction of children, and indirectly of their parents, of school boards and teachers in the elementary principles of personal, domestic, and municipal, sanitation". It would undoubtedly do much to give dignity and importance to the study of these matters, now universally required of school children by the state and national laws of this country. Public hygiene, upon which special emphasis is now being laid, is an integral part of the general subject of hygiene which has been a mandatory study in most of the states for twenty years and in all of them since 1902. The present development of the branch of hygiene relating to public measures for insuring health is every way commendable, but no well-balanced mind will allow it to overshadow the importance of observing the principles of personal hygiene which enable each individual to maintain vigorous normal resistance to the germs that escape the health officers broom.

AMONG the growing number of German scientists now studying the alcohol problem, one who has made very extensive investigations, is Dr. Hugo Hoppe, whose monograph on "The Dangers in the

Use of Beer" has been appearing in the last few numbers of the JOURNAL.

The conclusion of the article is published in the present issue, and the whole will now be reprinted in pamphlet form at a moderate cost. Those who have read the work as it has appeared from month to month will appreciate the aid this pamphlet will give in correcting the false assertion that beer used as it is in Germany is a harmless drink.

It will be of the greatest value in essay contests.

In this work, Dr. Hoppe discusses:

The effect of beer consumption upon whiskey consumption, and upon the actual amount of alcohol used; the diseases caused by the use of beer; the effect of beer upon resistance to disease, and upon the sick-rate; the effects of the family use of beer upon women and children; the effect upon the scholarship of pupils; the results to society, the nation, and the race.

The German edition of this pamphlet would furnish an excellent source of information to our German-American citizens who have not kept in sufficiently close touch with the Fatherland to know the results of the extensive investigations of the alcohol question now being carried on by their relatives over the sea.

Correspondence is invited in regard to supplying either the English or the German editions of this valuable work.

J. Stump, Principal of a school in Bern, Switzerland, is giving a course of lectures on the alcohol question in the University of Bern, at the request of the students of the Swiss Academic Abstinence Society, *Liber-tas*. Among the subjects treated in these lectures are, The Present Standpoint of Physiology on the Alcohol Question; Alcoholic Disease and Mortality; Alcohol and Executive Ability; Alcohol and the Race; The Alcohol Question from the Social and Economic Standpoint; The Solution of the Alcohol Question.—*Die Enthalt-samkeit*, Dec., 1908.

THE COMING OF SPRING

By Alice Gay Judd

"There's a hint of spring in the east wind's blowing

And the pussy-willows are peeping out;
There's joyous strength in the tree sap's flowing,
And signs of spring are all about.

"The snow on the southern slopes is melting,
And the little brook is no longer dumb;
Even the blue jays are hoarsely lilting
That spring has come, that spring has come.

"Mother Earth's bosom is filled with rejoicing,
And the tiniest life has lent its ear
To the glad refrain all nature is voicing,
Winter is over and spring is here."—Selected.

THE DANGERS IN THE USE OF BEER

BY HUGO HOPPE, NERVE SPECIALIST,
KÖNIGSBERG, GERMANY

[Continued from the February JOURNAL.]

THUS far I have spoken only of the danger to the individual in beer-alcoholism. But like alcoholism in general, that of beer carries with it most serious dangers to society. This is especially noticeable in the relation of alcohol to criminality. The brutalizing effects of beer-alcoholism is shown most clearly by the fact that in Germany crimes of personal violence, particularly dangerous bodily injuries, occur most fre-



quently in Bavaria where there is the highest consumption of beer.

I would call attention, also, to the deteriorating effect of alcohol upon the descendants of drinkers, which is one of the greatest dangers in the rapidly increasing use of beer; and to the destructive effect upon national wealth. This comes about both directly through the expenditure for beer, which, as already stated, exceeds two million marks a year; and indirectly through its effects in promoting sickness, premature death, poverty and destitution, criminality, and the cost of erecting and maintaining hospitals, insane asylums, institutions for idiots and feeble-minded, houses of correction, workhouses and prisons.

The "Gambinus" whose doings we have here exposed has become one of the greatest menaces to public health. Luther said that the beer-brewer was the pest of Germany, and we have today still greater reason for speaking of beer as a "pest". It has become worse than the whisky-pest because beer is more apt to lead to immoderate drinking. As Prof. Bunge says, "No other drink is so seductive".

In Munich a daily consumption of from

four to six liters (quarts) of beer by workmen is not considered immoderate and neither, in north Germany, is the daily use of ten glasses (3 to 4 quarts) of beer by students and professors thought out of the way.

But worst of all, beer is carrying alcohol into the families. There is scarcely a family in which beer has not become a daily drink. In the convenient form of bottled beer it forces its way into offices, stores and workshops.

The prejudices in favor of beer are promoted and extended by the numerous and influential beer interests which represent an enormous capital and which control the press and influence public opinion and otherwise exert their whole power to increase the consumption of their drinks and to extend their markets.

With the use of beer, alcohol is getting a hold upon the women who, until the last few decades, were quite free from it, at least in Germany. Thirty or forty years ago there were many women who knew alcohol only by name, or who used it only occasionally as on a holiday, and taking then only a sip of wine, or liquor or brown beer. But now most well-to-do women, like the men, take their glass of beer with every meal, and more after supper. The guest who comes in must be treated, and in large cities they flock to the restaurants, beer-palaces, and beer-gardens with their husbands and brothers and sit until late into the night beside their foaming glasses and when they sit at a table alone, it is becoming more and more noticeable that they have their glass before them.

Into the children's world also, as well as into the women's world, beer has penetrated. Many children receive daily with their meals, or at least with their mid-day lunch, their glass or glasses of beer. One can see every day in the restaurant, beer-gardens, or on excursions, young children drinking from the glasses of their parents and taking from time to time a goodly portion.

In 1898, in a public school in Bonn it was found that among 247 children from seven to eight years old there was only one who did not yet use alcoholic drinks; 110, or 44 per cent., used beer or wine daily; and 8 per cent. used brandy daily "to strengthen them".

In a district school in Leipsic, in the second class which consisted of forty-two boys from seven to eight years of age, there were fourteen who had already been intoxicated; seventeen, that took beer daily and twenty-four often drank whiskey. It was also remarked in this and other schools that such pupils were the most stupid and sleepy and had the lowest records.

In a district school in Charlottenburg in 1904, it was found that only 27.4 per cent. of the pupils did not drink beer; 16.3 per cent. drank beer regularly every day. An investigation made in Austria in 1901 brought out the fact that 92.5 per cent. of the boys and 90.8 per cent. of the girls had drunk beer, and that every third boy and girl used it regularly.

That the use of beer, like the use of alcohol in general, is extremely dangerous for children and can lead to the worst disorders, does not need to be emphasized here, as the recent publications of Prof. Kassowitz, of Vienna, and Dr. Karl Beck, of Heidelberg, have shown.

Delirium tremens and liver cirrhosis in children have increased lately at an alarming rate.

Beer has brought about such an universal use of alcohol as would not have been thought possible fifty years ago. Where today can be found the house that is free from it? With all classes of people, rich and poor, high and low, large and small, in the hut or in the mansion, everywhere, beer is the daily, ever-present solace, and is drunk in all places and on all occasions.

Accustomed from their earliest years to the characteristic excitement induced by this means, the children are eager to take part as soon as possible in the drinking customs of their elders, and by the time they are through school they are already experienced drinkers and ambitious to be noted for the amount they can "carry".

The finishing touches which they do not attain at the homes of their parents or upon the streets they acquire later in the work shop, at the counters, or in the army or university, which may be called the high school for beer-drinking. It is in this way that the temptation of the alcohol fiend comes to all in the form of beer and, although many remain moderate, it is nevertheless true that immoderation, with men at least, is the rule.

It is not to be wondered at that nervous and mental troubles are becoming more and more numerous as a result of the deteriorating effects of alcoholism upon the human race. Everywhere alcohol is finding new victims.

These are the terrible dangers which the regular moderate and immoderate use of alcohol is bringing upon the human race. On account of the democratic equality with which beer has established itself among all classes of people, the dangers from beer-alcoholism are much greater than the alcoholism from wine or whiskey which is confined to relatively few people.

The Dynamics of Alcohol—Lesson for Advanced Grades

By Edith M. Mills

NOTE. In connection with this lesson use the items on pages 100 and 104-5 this Journal. Other valuable references will be found in earlier numbers on pages: 27-30; 33-4; 39; 46; 49-50; 53-4; 67-8 and 96.

These topics may be used in a variety of ways, e. g.: (1) For papers for Friday afternoon program; (2) for morning exercises (each child copies an item and gives it briefly in his own words); (3) composition work using subjects mentioned; (4) busy work (child writes five reasons why trainmen must not drink on or off duty, why alcohol causes accidents, etc.)

Superintendents of Junior societies, Loyal Temperance Legions and Sunday Schools can also use the items to excellent advantage.

ALCOHOL CLOSES BUSINESS OPENINGS

IT is said that at least twenty-nine kinds of business discriminate against tipplers, and it is estimated that not less than 2,000,000 positions are thus closed more or less tightly. This does not include church positions, nearly all of which strictly require total abstinence.

Grave importance of this fact to the wage earner because:

(a) There is greater competition in the race for work on account of increasing native population and the influx of nearly 1,000,000 immigrants annually; (b) the old-age limit is constantly being lowered; (c) the cost of living is increasing.

I. THE USE OF ALCOHOL DECREASES THE NUMBER OF LIVING-WAGE POSITIONS BECAUSE:

a. *The Liquor traffic pays back for labor and for raw material an exceedingly small per cent. of every \$100 received for liquors (p. 48, Nov. JOURNAL).*

"If the money now spent annually for liquor were spent instead for shoes, clothing, food, furniture, and homes, it would give employment to 1,500,000 more persons than are engaged in the liquor traffic."

The alcohol traffic ranks the lowest in the aggregate number of wage earners in a list of fifty-five industries. It pays only 8 per cent. for labor, while the general line of manufactures pays 20 per cent. for general labor. (Barker.)

b. *It so impairs the efficiency of men that many corporations can not employ them.*

Note. Emphasize the point that these business men are not acting from philanthropic or sentimental motives, but because science and experience have convinced them it is "good business".

The United States Department of Labor found that 90 per cent. of railways, 79 per cent. of manufacturers, 88 per cent. of trades, and 72 per cent. of agriculturists discriminate against drinkers." (Barker.)

GENERAL REASONS WHY EMPLOYERS BAN ALCOHOL

1. Alcohol causes accidents. (Speak briefly of the enormous cost of even one accident on the railroad.)

2. Causes loss on account of waste of time.

3. Decreases working ability.

4. Impairs health and endurance.
5. Tends to lower morale.
6. Tends to lower ambition and to make men willing to do mediocre work.
7. Drinking employees reflect on the corporation or house employing them.
8. Fear of "excess" exists even where there is no clear understanding as to the power of alcohol to create appetite.

SPECIFIC REASONS CONNECTED WITH PARTICULAR KINDS OF BUSINESS

Note. This list is representative rather than inclusive. The teacher can and should substitute for these any which may have special interest for her class.

The traction corporations constitute the largest, strongest, and strictest temperance society in the world because they turn a man out of business if he is found to break the rules.

I. STEAM AND ELECTRIC RAILROADS AND MARINE SERVICE REQUIRE EMPLOYEES TO HAVE:

a. Alert senses.

(1) Alcohol decreases power of special senses, especially of sight (Kraepelin, Cutten) and hearing (Specht), both especially important in these lines of business.

Impaired vision may work damage in three ways; failure to see (x) exact train orders, (y) to read exact time on watch (a fearful railway accident caused by the failure of the engineer to read the time correctly was reported within a month) and (z) to see signals.

Cutten quotes numerous authorities (pp. 167-179) to show that in the case of persons who do not ordinarily drink, small doses of alcohol shorten the sight-range, blur forms and shapes, and obscure or even obliterate color perceptions, particularly red; and (2) That habitual drinkers, in rare cases, become blind; they frequently suffer from dimness of vision, and loss of power to distinguish red and green, and so insidious is the appearance of the disease that only an accident may reveal to an engineer that he is unable to recognize the signals.

b. Cool head.

(1) Alcohol even in extremely moderate quantities and highly diluted as in wine or beer, tends to confusion of mind so that it can not work with clearness or composure. The drinker often acts without due consideration—is reckless.

c. Instant Resolve.

(1) Alcohol lengthens choice reaction time (Eliot, JOURNAL, p. 50, Cutten *et. al.*); (2) Impairs judgment.

d. Steady hand.

(1) Alcohol even in moderation affects the strength and co-ordination of the muscles.

e. Bravery and high sense of duty.

Employees must and do work under the unwritten law of sacrifice of life or

limb for the sake of the lives committed to their keeping. They must save others *first*. (Speak of engineers and of Capt. Sealby of the Republic.)

(1) Alcohol tends to impair courage and self-sacrifice..

II. EXPRESS COMPANIES, BANKS, MERCHANTS (*especially those handling jewelry and high-priced goods*) AUDITORS, GOVERNMENT CIVIL SERVICE, ETC., REQUIRE:

a. *Promptness and accuracy.*

(1) Alcohol even in small quantities impairs accuracy and, hence increases liability to mistakes.

b. *Ambition.*

(1) Alcohol tends to make a person satisfied with present conditions and lowers self-initiative.

c. *Unimpeachable honesty.*

Alcohol tends to impair probity: By (x) encouraging wasteful and extravagant habits, and gambling and other vices; (y) by encouraging late hours, poor or bad companionship, and the frequenting of saloons and other undesirable places; (z) by injuring finest organized brain cells, impairs moral sense.

Laboratory Studies of Bacteria for High and Normal Schools

By F. B. Gregg, Chicago University

1. Preparation of a culture medium.—

Take a good, healthy, raw potato and from it cut pieces a centimeter ($\frac{3}{8}$ in.) square and two or three centimeters (an inch) long. Put one of these at once into a test-tube with water enough to cover the potato well. Use dry and previously baked absorbent cotton as a stopper. If test-tube and cotton are not available, use a jelly glass with its lid, and a much larger piece of potato. Now boil the water for a minute, being careful not to let the water boil up against the cotton. Set aside and boil again on two successive days, pouring off the water after the last boiling. If convenient put analine blue into the water to color the potato.

2. Experiments. (Distributed among members of a class.)

(a) With a clean knife or scalpel, scrape the upper surface of the tongue, and convey the scrapings or a part thereof to the potato, in the test-tube, reinsert the stopper at once and set the tube aside in a moderately warm place not in direct sunlight. After 24 hours examine the potato within the tube to see if there are any little white patches, *bacterial colonies*, on the surface of the potato, and record results. Examine similarly after 48 hours and then again after another interval of time. What is your conclusion?

(b) Treat as in (a) but set aside in a refrigerator. Record results and conclusion.

(c) Treat as in (a) but set aside in a dark, warm place. Record results and conclusion.

(d) Treat as in (a) but set aside in direct sunlight as much as possible. Record results and conclusion.

(e) Treat as in (a) but set aside in a closed fruit jar in which there have been poured several drops of formalin. Record results and

conclusion.

(f) Take the test-tube into a carpeted room that has just been swept with a dry broom, remove the stopper for half an hour, replace stopper, and set the tube aside as in (a). Record results and conclusion.

(g) Treat as in (f), but expose after the dust has had several hours to settle. Record results and conclusion.

(h) Treat as in (f), but expose out of doors instead of in room. Record results and conclusion.

(i) On the potato sprinkle dust from a dusty book, re-insert stopper, and set aside as in (a). Record result and conclusion.

(j) Introduce a house-fly into the tube and keep it there till you see it walk on the potato, and then allow it to escape, restoppering the tube thereafter and set aside as in (a). Record results and conclusion.

(k) Put upon the potato a drop or two of stagnant water or long standing vase-water, and set aside as in (a). Record results and conclusion.

(l) Touch the potato in several places with the pointed end of a pencil not freshly sharpened. Record results and conclusion.

3. In the light of the above experiments record your opinion of the following practices: (a) spitting in public places; (b) moistening thumb to turn leaves of a book; (c) putting pencil in mouth; (d) promiscuous osculation; (e) carpeting of floors; (f) dusting furniture and books with a feather duster; (g) admitting sunlight to living and sleeping rooms; (h) drinking from a public drinking-cup; (i) exposing fresh meat, and other foods to flies; (j) exposing milk in a dusty place; (k) eating decaying fruits; (l) using disinfectants.

The School in Action Against Preventable Disease

By **Edith M. Mills**

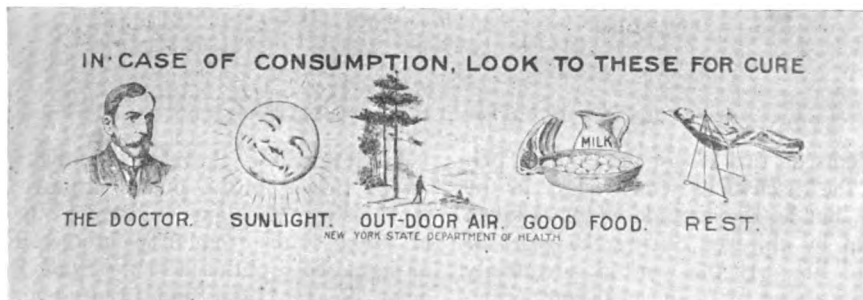
WHILE many of us are inclined to laugh at the old lady who said she noticed that if she lived through the month of March she generally managed to live through the rest of the year, all recognize the fact that the underlying truth it expresses is no laughing matter. Warm days tempting us to throw off the still necessary winter clothing; sudden changes of weather, always trying; the weakened condition of the body due in many cases to constant late hours and to poor ventilation; and, worst of all, the wind which keeps the street dust always in motion and forces everyone to inhale its germ-laden matter; all these render March a particularly trying month.

Many fatal cases of influenza, pneumonia, and tuberculosis, to say nothing of other germ diseases more or less dangerous, originate during these rough, windy days, but it is

deaths per thousand from most of these diseases has been decreasing more and more rapidly for some time. The people understand the value and the need of preventive measures such as isolation and disinfection; the health officers are alert; and *one* state is doing what forty-six ought to do. The JOURNAL agrees with Dr. Winship who says:

"A teacher or superintendent who will deliberately say that the disciplinary value of any subject now taught is greater than that which could be gained from teaching about tuberculosis [and other infectious diseases] is wanting in a knowledge of educational values".

Accordingly, we are furnishing material culled largely from the Anti-Tuberculosis Congress reports and the Michigan "Public Health Bulletin" which may be used by



the wind rather than the cold of March which should be blamed. It is suggested that it would be a wise precaution if on windy, dusty days very fine mesh veils be worn, and after exposure, the mouth and perhaps the nostrils be cleansed with a simple germicide.



MICHIGAN began some years ago to realize the enormous economic loss and the physical and mental suffering which was annually entailed by the death of thousands of her citizens cut down in the prime of maturity by infectious and, hence, strictly preventable diseases. Unwilling to sustain such losses, she led the nation in passing laws which required that all pupils "shall be suitably instructed in the principal modes by which each of the dangerous communicable diseases is spread and the best methods for the restriction and prevention of each such disease". Carefully kept statistics show that the number of cases of, and the

teachers everywhere, though unpleasant details should be omitted as far as possible.

We hesitate somewhat to deal with these matters. They do not make very pleasant reading; but if we can save precious lives by giving the facts we believe we ought to do so.

As thorough prophylaxis must also take into account the sinister influence of alcohol in predisposing to all infectious diseases, we commend to especial notice the powerful articles on this line by Dr. Weichselbaum and Dr. Raynier.

ALLEN HAZEN and Professor Sedgwick believe there is ample evidence to prove that "for every death from typhoid fever prevented by the purification of the water supplies, two or three additional deaths from other causes are prevented."

NOTE. We are indebted to Life and Health for the two cuts presented herewith. We suggest that teachers reproduce the one on this page on the blackboard and make it the basis of a talk to younger children.

TUBERCULOSIS AND THE PUBLIC SCHOOLS

LUTHER H. GULICK, M. D., NEW YORK

From an address at Anti-Tuberculosis Congress

THE importance of attacking this problem through the agency of the public schools is indicated by the fact that ten out of eleven of all the children of the United States come under the jurisdiction of the public school system for approximately seven years of their lives, from seven to fourteen. No other department of our government has such an intimate relation to the whole population as has the public school system to its children.

The ultimate attitude of society toward

of responsibility for the health of the children, health being regarded as fundamental to education.

2. Instruction in personal and school hygiene should be given in all normal schools to the same extent as are such major subjects of the curriculum as pedagogy.

3. All candidates for license to teach in public schools should be required to pass as severe an examination in school and personal hygiene as in any other subject.

4. All candidates for license to teach in public schools should be required to pass a strict examination for the detection of contagious disease and also for such disabilities as would render them undesirable as risks".—*Charities and The Commons.*



such problems as this is not determined primarily by the discussions which occur in the daily press, but by the attitude which is taken and secured by children during the years of their school life. If the work is adequately done during these years, it means a permanent set of convictions and habits which shall guide the children both in action and thought throughout the balance of their lives.

The steps necessary to be taken are four:

1. The detection of tuberculosis among the pupils.

2. The detection of tuberculosis among teachers and prospective teachers.

3. The instruction of pupils with reference to the fundamental facts regarding tuberculosis. The instruction that should be given to children may be divided into two major headings; that with reference to individual hygiene, and that which relates to social, or community hygiene.

4. The instruction of prospective teachers with reference to the fundamental facts as to tuberculosis....

[It appears that] in addition to the already recognized need of hygienic conditions in the school, together with a wholesome curriculum embracing exercise, play and the like:

1. School systems need and are already beginning to assume a new attitude and sense

A RECENT alarming outbreak of diphtheria in the public schools of Lansing, Michigan, resulted in the sending of throat-swabs from fifty-eight cases of real or supposed diphtheria to the State Bacteriologist, M. L. Holm, and twenty-eight proved to be true diphtheria.

The bacteriologist found that "33 1-3 per cent. of the clinical diagnoses of diphtheria were wrong and 38 3-8 per cent. of the doubtful cases were diphtheria", hence he reasoned that one-third of the affected persons had suffered unnecessary quarantine and, on the other hand, a number having true diphtheria have escaped quarantine and spread disease.

These and other investigations have led him to emphasize the following points:

(1) Diphtheria cannot be diagnosed positively without the use of bacteriological methods;

(2) Prognosis and treatment is dependent upon accurate diagnosis;

(3) No arbitrary time for quarantine is reliable. The duration of quarantine should be guided by the bacteriological findings.

(4) Diphtheria antitoxin can save practically every case if used in time and its use should never be neglected. Out of the four fatal cases of diphtheria in the epidemic, none were properly treated with antitoxin.

WHY "CLEAN" MILK?

ALTHOUGH it has long been believed that milk from tuberculous cows was one of the most fruitful sources of consumption, the manner in which the milk is infected has not been so well understood. E. F. Pernot, Bacteriologist, Oregon Agricultural College, presents new facts which ought to be widely diffused. He says in part:

The greatest menace to public health today is probably the milk supply. The main source of the infection is the particles of litter and manure falling into the milk at milking time.

When a cow is affected with pulmonary tuberculosis in an advanced stage, one or both lungs will be found to contain considerable quantities of pus that set up an irritation causing the cow to cough. As she does not expectorate, the pus that is coughed up is swallowed, eventually passing out with the excreta. A quantity of pus equaling the size of a thimble will contain many thousands of the living bacilli. The digestive fluids do not kill the tubercle bacilli so they pass to the excreta, bedding and hair of the cow, thence into the milk bucket and to the consumer. A single hair dropping from the cow into the milk, if soiled with manure, will carry with it from one to three thousand germs, and a particle of manure barely visible to the naked eye will carry proportionately more. Here is the great argument for clean stables and clean animals.

INSTRUCTIVE

INTERESTING

"Correct English— How to use it."

A Monthly Magazine Devoted to the
Use of English.

JOSEPHINE TURCK BAKER, Editor.

PARTIAL CONTENTS

Queries and answers.
Shall and Will: Should and Would: How to Use Them.
Pronunciations (Century Dictionary).
Correct English in the Home.
Correct English in the School.
What to Say and What Not to Say.
Course in Grammar.
Course in Letter Writing and Punctuation.
Business English for the Business Man.
Compound Words: How to Write Them.
Studies in English Literature.

AGENTS WANTED

\$1.00 a Year. Send 10 cents for sample copy.

CORRECT ENGLISH, Evanston, Ill.

SAFEGUARDING THE PUBLIC.

IN THE *Journal of the American Medical Association*, John R. Haynes, M. D., of Los Angeles, shows the dangers arising from tuberculous persons riding in ordinary cars by citing several out of many cases he has observed.

He suggests that for long distance passengers, the railroad be required to furnish, and to run at intervals, hospital cars provided with a nurse and fitted up especially for consumptives who must be compelled to ride in those cars. For consumptives travelling only short distances, a portion of a car could be set aside—a portion like a smoking compartment, and filled with reclining chairs, destructible sputum cups, etc. These hospital sleeping cars could be run weekly or fortnightly and the compartment cars daily; all would be thoroughly disinfected after each trip.

Railroad passenger agents declare these plans practicable and feasible if the state health boards will declare tuberculosis a contagious disease and thus give railroads the legal right to refuse ordinary tickets to such patients. Such an arrangement would not only make ordinary travellers safe but add to the comfort and safety of the sick.

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

Purpose, Methods, Advantages, Membership

An Educational Temperance Organization

Purpose.—To make known in every possible way, in popular form, the proven facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

Methods.—The dissemination of facts by the following and other methods: *Personal Correspondence*, *An Editor's Press Circular*, *Loan Exhibit of Scientific Charts*, *Popular Leaflets*, *The School Physiology Journal*, *A Stereopticon Lecture* (slides and reading rented).

Its Membership

Advantages.—All members receive free *The School Physiology Journal*, notices of useful new publications, samples of leaflets or other information published by the FEDERATION.

Membership.—All who desire (1) to have fuller acquaintance with the alcohol and narcotic question, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance are invited to become members.

All who contribute \$2.00 or more annually are known as *Associate Members*.

All who contribute \$10.00 or more annually are known as *Sustaining Members*.

The payment of \$100.00 or more at one time constitutes one a *Life Member*.

THE SCIENTIFIC TEMPERANCE FEDERATION has a unique place to fill; a distinct message and work. Its aims are fundamental and practical.

Address all contributions, correspondence, inquiries, etc., to THE SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull Street, Boston, Mass.

Travelling Loan Exhibit

—OF—

Attractive, Anti-Alcohol CHARTS

ENTIRELY NEW

For Pupils, Teachers, Professional
People, the General Public

Exhibit consists of 25 colored charts, size 22x28 inches, prepared by the Scientific Temperance Federation for exhibition at the International Anti-Alcohol Congress at Saratoga. They illustrate the Relation of Alcohol to Crime, Disease, Heredity, Degeneracy and the Disabilities of School Children; its Influence upon Mental and Muscular Working Ability and upon Athletics; its Relation to Tuberculosis and other Infectious Diseases; the decline of the Use of Alcohol in Medicine.

The salient facts are strongly set forth by means of attractive photographs and colored columns, blocks, etc. Based upon reliable scientific work. Entirely free from the objectionable physiological details found in the old fashioned charts.

HOW USED

By Lecturers at Teachers' Receptions and Institutes and in Normal Schools, at Conventions, and other Public Meetings; in Sunday Schools on Temperance Sunday, etc.

By Local Temperance, Grange, and other Organizations as follows: A hall of suitable size may be secured and the charts hung therein, advertising the fact thoroughly through the town or city, and inviting the public, including particularly public school teachers and press representatives, to the exhibition. An hour, afternoon and evening, may be given to short, pointed addresses on practical subjects connected with the temperance question. Temperance literature may be distributed.

Reports of renewed interest are coming in from places where the charts have been exhibited.

PRESS AND PERSONAL COMMENT ON EXHIBIT

More than 1,000 persons, including 300 school boys, saw this exhibit at St. John.—Private letter from St. John, N. B.

I must congratulate you on the excellent exhibit (Christian Endeavor Biennial Convention, Lynn, Oct. 19-24, 1908). The appeal to the eye brings facts home more strongly than in any other way, and these striking charts preach with great force for total abstinence.—Private letter from Boston, Mass.

The exhibit of scientific charts at the Saratoga World Centennial Temperance Congress was the most convincing demonstration of the evil effects of alcohol upon the human family that I have ever seen.—Edward H. Emory, Field Secretary of Maine Civic League.

One of the most interesting and instructive exhibits at the Provincial Teachers' Association in session in the Normal School Building, is a collection of beautifully colored charts with heavy black lettering, making a very effective and catchy appearance. A close study of the charts impresses one with their lack of exaggeration and apparent truthfulness as well as the careful investigation necessary to their preparation.—Daily News, Truro, N. S.

Send for full information to
THE SCIENTIFIC TEMPERANCE FEDERATION,
23 Trull Street, Boston, Mass.

Illustrated Lecture

A New Story in a New Way

THE scientific side of the alcohol problem is here presented in a popular lecture which appeals to the eye as well as to the ear by means of 68 fine new lantern slides. These include interesting pictures, a number in colors made from original drawings representing the results of scientific experiments, and a few attractive physiological plates; accompanied by carefully prepared manuscript address.

AVAILABLE AND SPECIALLY DESIRABLE FOR

NO-LICENSE CAMPAIGNS; PUBLIC TEMPERANCE MEETINGS HELD IN CHURCHES OR BY TEMPERANCE ORGANIZATIONS; LABOR UNIONS; SOCIETIES OF CHRISTIAN ENDEAVOR; LOYAL TEMPERANCE LEGIONS; PATRONS OF HUSBANDRY; LYCEUMS AND CHAUTAUQUAS; PARENTAL OR INDUSTRIAL SCHOOLS; SOCIAL BETTERMENT WORKERS; AND FOR TEACHERS' INSTITUTES AND RECEPTIONS, and HIGH AND NORMAL SCHOOLS.

MAIN TOPICS ILLUSTRATED

ALCOHOL AND MUSCULAR WORKING ABILITY

Slides showing ergograph, effects of alcohol on muscular work, athletics, Marathon runners, Stadium at Athens, International championship, etc.

ALCOHOL AND MENTAL WORK

Reaction time, signal station, alcohol and memorizing, alcohol and scholarship, prize gunners on U. S. S. Albany, etc.

CELL LIFE—EFFECTS OF ALCOHOL

Typical cell, cells building tissue, nerve and muscle cells, association fibres, effects of alcohol on fibres, alcoholism and crime, etc.

EFFECTS OF ALCOHOL ON VITAL RESISTANCE

Amoeba life, white corpuscles, destroying disease germs, tuberculosis, Metchnikoff and Laitinen, resistance to disease, etc.

ALCOHOL AND THE RACE

Hereditary effects of alcohol, Bum and Topsy, and Nig and Topsy, alcohol and disabilities of school children, effects on growth and development, etc.

ALCOHOL AND THE COMMONWEALTH

Reducing taxes, coming storm, Liberty, etc.

COMMENTS ON LECTURE

Dr. T. Alexander MacNicholl, of New York: "The scientific facts are well presented and clearly stated. The slides suggested amply illustrate the text."

"I write to bear witness to the merit of the inspiring and instructive lecture given before the churches of Neponset. Unique in conception; scientific in presentation; beautiful in illustration. It held the wrapt attention of old and young alike."—Rev. Charles H. Washburn, Trinity Congregational Church, Neponset, (Boston), Mass.

The Following Speakers Can Be Secured (or Slides and Manuscript will be rented).

Miss Cora Frances Stoddard, Miss Edith M. Wills, Mrs. Susan S. Fessenden.

FOR BOSTON AND VICINITY ONLY

Rev. Richard Wright, Hon. John Shea, Mr. Robert H. Magwood.

THE FOLLOW-UP PLAN

for educational work doubles the value of the lecture to the community. Suitable literature.

Terms very reasonable.

Full information on request.

THE SCIENTIFIC TEMPERANCE FEDERATION,
23 Trull Street, Boston, Mass.

592

Anti-Narcotic Number

Rec'd
MAR 25 1909
B. P. L.

THE SCHOOL PHYSIOLOGY JOURNAL



Easter

" See, rising with the Easter morn,
A subtle radiance, new born!
And lo! a sudden glory pours
From out the East's unfolding doors!
Hark! bluebirds blithely build and sing!
Life! Life! on every side doth spring!
Yet morning's rose is lost too soon
In white effulgence of the noon;
And soon the noontide's lustrous light
Sinks vanquished by the shades of night,—
One thing alone shall last for aye,
The Love that gave the Easter Day! "

NATURE BOOKS

Abbott's A Boy on a Farm	\$0.45
Bartlett's Animals at Home	.45
Beebe and Kingsley's First Year Nature Reader	.35
Bradish's Stories of Country Life	.40
Carter's Nature Study with Common Things	.60
Comstock's Wild Flowers which Blossom in April and May	.25
Cummings's Nature Study for Primary Grades	1.00
Dana's Plants and their Children	.65
Hawkes's Trail to the Woods	.40
Holder's Half Hours with the Lower Animals	.60
Half Hours with Fishes, Reptiles and Birds	.60
Half Hours with Mammals	.60
Stories of Animal Life	.60
Kelly's Short Stories of Our Shy Neighbors	.50
Keffer's Nature Studies on the Farm	.40
Monteith's Some Useful Animals	.50
Needham's Outdoor Studies	.40
Overton and Hill's Nature Study	.40
Pyle's Stories of Humble Friends	.50
Stokes's Ten Common Trees	.40
Walker's Our Birds and Their Nestlings	.60

Send for Special Nature Study Pamphlet

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

The Best Yet Beer, Wine and Tobacco Leaflets

Dangers in the Use of Beer

By HUGO HOPPE, KONIGSBURG

The most comprehensive monograph on this subject yet published. Shows effects of the use of Beer on mental and muscular working ability; its effects upon health; and its relation to sociological problems.

	per 100
Dangers in the Use of Beer (18 page)	\$2.50
Commercial Fictions vs. Facts about Beer	.35
They Want Your Money (Beer Leaflet)	.45

	per 100
False Claims for Wine	\$.30
Wine a Peril to Childhood	.25
Wine does not Drive out Drunkenness	.25
Alcoholism in Wine-growing Countries	.25
Alcoholism and Tuberculosis	.30

	each
Power of Tobacco Habit	\$.20
Why Cigaret is Especially Harmful	.20
Use of Tobacco	.05
Boy and the Cigaret	.05

Many others in stock. Write.

PAT'S PICK

100 of the Sweetest, Sanest, Jolliest
Songs ever made.

COMPILED BY HENRY R. PATTENGILL

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS.

It contains Songs for Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises, Patriotic Occasions, Teachers' Institutes and Associations, That Boy, That Girl, Old Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's Pick" will put life and joy into your school singing. Whatever regular music book you may be using, send for this premium collection of the choicest songs for use in school.

CLOTH, 50c per Copy.

\$4.00 per Dozen.

\$25.00 per 100.

Address

HENRY R. PATTENGILL
Lansing, Michigan.

CONTENTS

	Page
Influence of Tobacco Smoke on Development.	113
The Triangle Athletic League.	115
Effects of Chronic Tobacco Poisoning.	116
What Tobacco Does Not Do.	116
National Vigor and Tobacco.	117
Evidence Against Alcohol.	118
Use of Tobacco by Educators.	119
Editorials.	121
Bobbie Morton Avoids a "Blind Lead."	122
(Lesson Story for Fifth or Sixth Year).	126
Temperance Teaching in the Sunday School.	126
The Cigaret-Smoking Boy.	128

SPECIAL OFFER

Alcohol and the Human Body

By HORSLEY and STURGE

The Greatest Popular Book on the Physiological Aspects of the Alcohol Question.

Revised to Date and Enlarged

Indispensable to Educators and Social Students; to Y. M. C. A., Sunday School and Temperance Workers.

Now Within the Reach of All

Price reduced from \$1.65 to \$0.99

New Combination Offer

Alcohol and the Human Body } Only
and } \$1.50
Physiology Journal till June 1910 }

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

School Physiology Journal

Vol. XVIII

BOSTON, APRIL, 1909

No. 8

The Great Cause—The Cause of the Child

I would rather have the support of the boys than of the men and women. The cause that is the dearest and sweetest thing in the world is the cause of the children, and if I have had anything whatever to do with helping them and smoothing their way, I count it the happiest thing of my life. If the state wishes to perform its duty, it must do it as a careful and loving father, or the work is all in vain. It is certainly better to prevent crime than to punish it, and that is what I have been trying to do. When I realize that through the work of three years, less than 4 per cent. of the boys have failed in the respect and trust put in them, I feel that it has not all been a failure.—JUDGE BEN LINDSEY.



THE INFLUENCE OF TOBACCO SMOKE AND NICOTINE UPON DEVELOPMENT

BY C. FLEIG OF FRANCE

From the *Comptes Rendus Hebdomadaires des seances de la Societe de Biologie* (April, 1908)

IN THE last number of the *Comptes rendus de la Soc. de Biol.* [Proceedings of the Society of Biology] M. M. L. Richon and M. Perrin described the retardation of growth caused in the rabbit by the sub-cutaneous injections of infusion of tobacco. Their note has induced me to recapitulate the disorders in development that I have obtained, chiefly with the guinea-pig in conjunction with the rabbit and dog from the influence of tobacco and nicotine poisoning. I have used simultaneously different methods:

(1) Inhalation of the tobacco smoke, both in large amounts, the animal being placed daily under a bell-glass in dense smoke during variable periods of time, and in relatively small amounts, corresponding closely to the smoke-laden atmosphere in many public places; (2) Sub-cutaneous injection of aqueous extracts of smoke; (3) Sub-cutaneous injection of nicotine and the salts of nicotine.

Part of the animals subjected to this treatment were females *enciente*; part were newly born, or young animals taken at varying periods after birth; part were adult animals.

PRE-NATAL POISONING

The young of the female guinea-pigs that were submitted to inhalation of dense smoke have never been normal. They were often born dead.* When they were born alive their weight was notably less than that of the average. (The young of one litter, for instance,

weighed from 44 to 59 grams [a gram equals 15.4 grains] while that of normal ones is 75 grams). The same was true of their size* which only rarely exceeded .12 of a meter, the normal average being .135 of a meter. Furthermore, they did not live very long, from a few days to a month generally, and during this time the daily increase in the weight of the body was very much less than normal (2 grams, for example, during the first month instead of 5.8 grams normally gained). Permanent survival was a rare exception, and in these cases the animals remained sickly and stunted; there was a diminution in the number and integrity of the red corpuscles. Again, all these disorders are much more marked and the survival impossible if the inhalation of dense smoke is continued with the young animals.

The young of females submitted to weak inhalations also showed disorders of development. The weight of the body was less, 62 to 64 grams for guinea-pigs of the same litter, and the daily increase 2.7 grams to 4 grams in place of 5.8 grams in the weight. It is not unusual to see all the young of one litter die at the end of one to two months. Deficiency of blood corpuscles is the rule. If one places these animals themselves in an atmosphere of smoke their development is still more abnormal.

Repeated injections of the extract of smoke into *enciente* females produce effects similar to those of the inhalation of dense smoke.

*Inhalations of dense smoke often produced abortion in dogs, rabbits, and guinea-pigs. On the contrary, we never observed this last in animals placed simply in smoke-laden atmosphere.

*Measured from the muzzle to the tail.

If nicotine or the salts of nicotine be injected into such females, even in very small doses (a fraction of a milligram daily) it is very difficult to obtain the young alive, or able to live.

POISONING OF THE NEW-BORN OR THE YOUNG OF VARYING AGES

Inhalation of dense smoke hinders the development according to the length of time it occurs after birth. The disorders produced are of the same kind as those that follow pre-natal poisoning.

Of two guinea-pigs of the same litter subjected regularly to these inhalations from the fourth day after birth, when they weighed respectively 83 and 77 grams, one died on the 44th day of treatment, weighing 174 grams; the other, then living, weighed 169 grams, the normal average [weight at this age] being about 330 grams. The daily increase in weight of this [second] animal during the first month never exceeded two grams. The inhalations were stopped after the 44th day and at the end of the third month the animal weighed only 295 grams. The normal weight at that time would have been about 485 grams.

The daily increase of growth during these three months had been only 2.4 grams when normally it is 4.54 grams.

Again, for a long time after all inhalations have ceased the animals remain very incompletely developed and are in a state of marked inferiority, compared with the control [normal] animals.

With weak inhalations, growth makes better progress, but the increase in weight is always less than that of normal animals. The return to physiological equilibrium may be completely attained some months after the suppression of the inhalation. Death is the exception.

The injection of the extracts of smoke, of nicotine, and of the salts of nicotine produces the same results as inhalation of dense smoke.

In experimenting upon adult animals one produces emaciation and intense anemia, but they recover if one discontinues the cause of the poisoning. In general, when death occurs at the end of a pre-natal poisoning or of poisoning after birth, it appears to be due to a progressive loss of various functions to the organism, rarely to an intercurrent disease. Injury to the blood vessels is the most apparent (aortic dilatation in particular).

The agent in tobacco smoke which produces the abnormal development, is the nicotine. The repeated injections of extracts of smoke precipitated with tannin, with ammonia salts,

or with piridine bases in the proportions in which these bodies are found in smoke, have never produced disorders comparable with those of the natural extract. In the case of the inhalations of dense smoke there may be a partial toxic action, due to carbon monoxid and carbon dioxid, but practically, that it to say, in the conditions which may be realized with men (smoke-laden atmosphere), it is the nicotine alone that acts. Abnormal development is not observed if one subjects the animals to weak inhalations of smoke after passing it through an appropriate system of absorption.—*Translated for the School Physiology Journal.*

OBSCURE POISONING

J. R. LEADWORTH, B. S., M. D.

SEVERAL years ago we had under our care a boy of seven or eight years who gave evidence of suffering from the effects of some severe systemic poison, the exact nature of which could not be determined. His habits were all carefully inquired into, without giving any clue. He had recently come to live with his grandparents. Upon subjecting our little patient to a severe sweating process, we discovered that the skin gave off a marked nicotine odor and stain. A repetition of the treatment on the following day gave like results and this continued until the evidences of tobacco disappeared, when the little fellow rapidly recovered.

Further investigation elicited the fact that the boy's father was an inveterate smoker, and when at home, kept the room saturated with tobacco fumes. The boy never touched the weed. But who can be surprised that the sensitive organism of the child, constantly absorbing such an atmosphere, succumbed to it? And who can estimate the multitude of children whose cheeks are blanched, and whose bodies are frail, because of their father's indulgence in the poisonous weed?—*Life and Health.*

SLAVERY OF THE HABIT

Mr. Richard G. Boons, long a teacher in Cincinnati, says: I have but one sentiment on the question of cigaret using by the young. It is stupefying, not upon the body or intellect alone, but it dulls all the finer moral sensibilities and ideas of manliness. The will is weakened, which carries with it the power and disposition of personal initiative. One addicted to the use of cigarets is not less a slave than is he who is addicted to the drink habit.

THE TRIANGLE ATHLETIC LEAGUE

BY ROBERT J. HAMILTON

Boys Secretary of Y. M. C. A., Oak Park Illinois

AN ENTIRE gang has given up smoking and made the habit unpopular. Their deportment and work has been much improved."

"It has kept, to my knowledge, many from the use of tobacco."

"It has helped to develop school spirit and I believe it has been the cause of the decrease in truancy in our school."

"Scarcely any boy who has been connected with the League but has been benefitted."

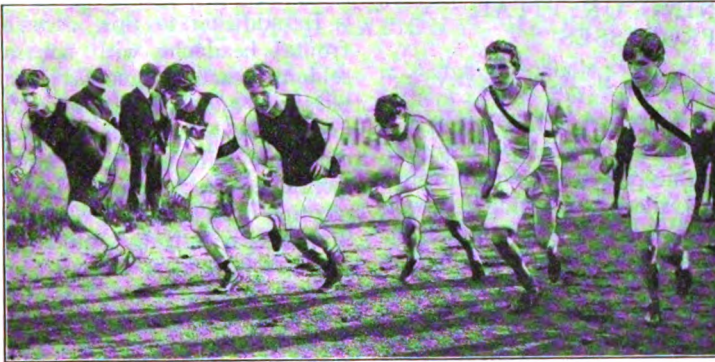
Such are some of the good things said by the school principals about the work of the Triangle Athletic League of Oak Park, Ill.

This league is conducted by the Young Men's Christian Association working with the eight principals of the grade schools as members of the executive committee. The name Triangle Athletic League was chosen because

cards were signed at the school, and school spirit and enthusiasm and the desire to do what the other fellows were doing, caused many boys to sign the agreement who had not thought it over sufficiently and, therefore, did not keep it.

This year we are trying a new experiment. A letter was sent to the parents of every boy in the fifth, sixth, seventh and eighth grades setting forth the object of the League and enclosing a pledge card to be signed if it seemed best to the boy and his parents. All these signed cards, together with the membership fee of five cents, were handed to the teachers by a certain date. The teachers gave them to the principal of the school and he sent them to the Y. M. C. A. where they are kept on record.

Any cards which are signed later must be



the triangle is the emblem of the Y. M. C. A. and signifies the equal development of body, mind and spirit; and the idea of the League was to put stress on the positive side of activity rather than the negative side of abstinence.

Each boy joining the League must sign the following agreement:

"As a member of the Triangle Athletic League of Oak Park, Ill., I shall endeavor to build up a strong body, a clear mind, and an upright, moral character; to aid in these purposes I promise not to use alcoholic liquors or tobacco in any form before reaching the age of eighteen years."

If a member violates this agreement and it is proven against him, he is not allowed to take part in any League contest for three months, and for a second violation he is not allowed to participate for six months.

During the first, and second years of the League's existence in Oak Park, the pledge

brought by the signer personally to the Secretary of the Boy's Division of the Y. M. C. A., who is also Secretary of the League. This plan we believe, is more likely to insure that only those boys who mean to keep the pledge will sign it.

The League conducts a basket ball tournament and a series of indoor baseball games in the Y. M. C. A. Gymnasium each fall.

A beautiful banner is awarded the winning team and this is hung in the school building.

An indoor Athletic meet will also be conducted this spring, one day being devoted to the eighth grades, another for the seventh and another for the sixth. The school winning the most points during the three days will receive a banner.

An outdoor Athletic meet is also conducted near the close of the school year. Last year one hundred and twenty boys participated. A spelling contest was conducted and a banner

awarded the winning team.

We also held a swimming contest last year but this feature was not repeated this year.

The events which we used in our outdoor Athletic meet last spring were: for the eighth grade, hundred yard dash, eight pound shot put, running high jump and the relay race; for the seventh grade, seventy-five yard dash, baseball throw, running broad jump, low hurdle race; for the sixth grade, fifty yard dash, baseball throw, hop, step and jump and potato race.

The interest in these meets has been so great that the entrance fees to the grounds have more than paid the expenses.

Not all the boys who have signed the agreement have kept the same and yet the feeling both on the part of the teachers and of the Y. M. C. A. officers is that the League is accomplishing considerable in encouraging boys to keep from using tobacco.

EFFECTS OF CHRONIC TOBACCO POISONING ON VITAL PROCESSES

BY FR. DORNBLUTH, M. D., GERMANY

From Genmer and Volkman's Clinical Lectures

ON THE part of the *respiratory organs* chronic nicotine poisoning is manifested by dyspnoea [labored breathing], slower respiration, frequent yawning, pain around the heart, attacks of asthma, concerning which it is not known whether it is to be ascribed to the respiratory nerves, to a nerve spasm of the bronchus, or to a disturbance of the heart activity. Frequently there is a very troublesome difficulty in breathing which comes on particularly in the evening, when there is much smoking. This consists of a feeling as if one could get no air and were in immediate danger of suffocation. Business is impossible. The slow deep inspirations require all the strength and attention, while the respirations proceed quickly and easily.

The *heart*, pre-eminently, shows great sensitiveness to nicotine. While the moderate use of tobacco often increases not inconsiderably the number and force of the heart-beats, irregular and intermittent pulse, in the absence of other causes, is looked upon by many physicians, as due to the immoderate use of tobacco. Decaisne found 24 cases of intermittent pulse among 88 smokers and saw it become regular again in those who discontinued tobacco. Palpitation of the heart is very frequent in chronic tobacco poisoning. In two observations made by Clemens, the pulse was frequently slowed to 50-60 strokes a minute and rose

during the smoking to 60-69. [Normal pulse is 70-75 strokes.]

For the cause of these heart symptoms one must look to the weakening or checking influence of tobacco upon the vagus and the continual stimulation of the sympathetic nerve. The slowing of the pulse in the last two cases is due to the general weakening of the nervous system.

General *weakening of the nervous system* is the most prominent of all symptoms of chronic tobacco poisoning; the low spirited, whining disposition with distaste and disability for mental work; the dizziness, the feeling of anxiety due probably to the disturbance of the heart innervation; the disinclination for exercise; the amblyopia; the supersensitiveness of the auditory nerves; the irritability of the sensory nerves, especially chronic spinal irritation; the rapid exhaustion; the feeling of weakness and trembling; the frequent muscular contraction, etc.; and finally loss of appetite and weakened digestion where these are observed.

In addition to this, occasional attacks of frontal headache with nausea and sickness, seldom reaching mental excitability, local paralysis and convulsions, labored breathing and angina pectoris in the evening, vomiting, diarrhea, colic and even strangury, must be mentioned as intercurrent results of subacute, nicotine poisoning.—*Translated for the SCHOOL PHYSIOLOGY JOURNAL.*

WHAT TOBACCO DOES NOT DO

TOBACCO does not aid digestion. It does not "prevent lean people from getting too stout", or "stout people from getting too lean". It has no "power to preserve the teeth from decay" or to "neutralize the poison of "contagion". It is not "a disinfectant". Nor does it "enable the student to pursue his studies with safety in the dissecting-room because of some 'mysterious power' it exhibits over the morbid odors and vapors of the dead-house," as a recent writer has asserted. It is not "a remedy for asthma, or indigestion, or any other diseased condition". And indeed, it may be safe to say that it does not do any one of the hundred and one harmlessly beneficent things it is popularly supposed to do, while we positively know that it does at times produce outright, serious disturbances of the heart, nervous system, and mucous membranes, while its use on the part of the patient also limits and diminishes possibilities of recovery in many other diseases.—M. Woods, M. D., in *Journal of Inebriety*.

Tobacco-smoking students entering Yale (1888-97) averaged :

To have lungs holding 5 cubic inches less air ;

To be 1-3 of an inch shorter although 15 months older than the non-smokers.

The men in college were divided into three groups :

(1) Those who never used tobacco; (2) Those who used it for a year at least; (3) those who used it irregularly.

Observations for nine years showed that the non-smoking group gained :

In weight. 10.4 per cent. more than those who had smoked a year; 6.6 per cent. more than those who had smoked irregularly.

In height. 24 per cent. more than those who had smoked a year; 11 per cent. more than those who had smoked irregularly.

***In girth of chest.* 26.7 per cent. more than those who had smoked a year; 22 per cent. more than those who had smoked irregularly.**

In lung capacity. 77 per cent. more than those who had smoked a year; 49 per cent. more than those who had smoked irregularly.

Out of every hundred taking highest rank, only 5 were smokers ; 95 were non-smokers.

Out of the rest of the students 60 out of every hundred smoked.

NOTE.—Copy this table on the blackboard or on a chart where it can remain in sight of the boys for some time and, also, have pupils copy it in permanent notebooks.



THEN THE Japanese heard of Dr. Seaver's experiments they gave heed.

But before going into the subject we

should remember that every boy in Japan used to smoke and that many girls smoked too. We should also remember that Japanese tobacco is not very strong, and not so harmful as ours. Yet in spite of this, several years after Dr. Seaver's experiments, a set of Japanese men decided that the wealth, the intelligence, and the fighting power of the nation would be increased if the children could be kept from smoking. The result was that in December, 1899, a "Bill for prohibiting the smoking of Tobacco by Young Persons", was introduced into the House of Representatives in Tokyo.

All those who supported this bill used America and Germany as the great arguments. They said that in Germany youths under 16 were forbidden to smoke lest they should become unfit for soldiers. They also said that in America at the time of the war with Spain, hundreds of young men were refused by the doctors because they were not vigorous enough to be soldiers, and that ninety out of every hundred of them were smokers. They also spoke of Dr. Seaver's work at Yale.

All this was quite convincing, especially when one man added: "If we expect to make this nation superior to the nations of Europe and America, we must not allow our youths

in common schools, who are to become the fathers and mothers of our country in the near future to smoke. If we desire to cause the light of the nation to shine forth over the world, we ought not to follow the example of China and India."

Another man said, "When I see useful young men, with their school uniforms on, smoking, I feel very sad and often I say to myself, "How can they accomplish great things when they are slaves to tobacco?" Mr. Omura said :

In 1876 I received treatment from Dr. Takagi in the Tokyo hospital, who made an incision in my face, as you see, because I was in a hopeless state from tobacco poison. At that time, as I heard afterwards, all gave up hope for me, and my relatives discussed the methods of carrying my body back to its last home. But here I am, well and strong. Thus from my own experience I know that tobacco is a bad thing; hence I should like to see it prohibited all together, if it be possible. I began to smoke at nine, and at twenty-four or five the habit had become simply fearful. I spent much money not only for tobacco itself but also for smoking materials. Several times I fell down unconscious on the floor. Such was my fondness for tobacco. But twenty years have passed since I gave it up entirely, and I have gradually become stronger, and at present I am a little stronger than Mr. Inouye. If one smokes, whether he is young or thirty years of age, whether a student in a university or in a post graduate class, he will be poisoned; hence I favor the idea of prohibiting smoking altogether among students.

Later some one said:

As to schools and scholars, we pay taxes and bear heavy expenses for their support, and we watch with deepest interest the success of every scholar. And yet, if the weight of their bodies decreases, the lung capacity lessens, and finally the scholars themselves become diseased because of no proper protection against smoking tobacco, then the taxes paid by the people at great sacrifice will become fruitless. I earnestly entreat you to reconsider the

*From "Town and City", Gullett Hygiene Series.
Used by permission of the publishers, Ginn and Co.

question of putting special restriction upon students.

After the bill had been fully discussed and some slight changes made it was adopted by the House of Representatives and then sent to the House of Peers.

Among other Peers Mr. S. Izawa spoke. He said:

I too wish to say a word in support of this excellent bill. A few days ago some one sent us some printed matter. What was written thereon? It was written that should this bill become a law of the nation, there would be a loss of yen 200,000 to the National Treasury. Nonsense! He is a traitor. He is willing to sacrifice the character of our youths simply for yen 200,000. What wickedness! Such a person would most surely try to urge the use of opium by and by. As there are such traitors, this bill must by all means be carried unanimously, and thus the honor and wisdom of this House will be vindicated before the public.

Mr. T. Obata said:

I cannot agree with Messrs. Murata and Izawa. I admit that tobacco is injurious to young persons, but parents themselves should be able to stop its use. Should our children be caught by the police in the streets because of smoking tobacco, this fact is more of a disgrace to our children than smoking itself.

At this point Mr. J. Kodama sprang to his feet and said:

I wanted to keep silence, but as I heard the gentleman speaking against this bill, I felt I must say a few words in its favor. I heard from an American gentleman that in his country a large number of volunteers for the army service were rejected on account of the weakness of their hearts, and the chief reason assigned for this defect was their habitual use of tobacco. I do not need to say any more from the educational standpoint, but if our youths are to become unfit for military service by the use of tobacco, it is alarming. By all means, let us stop the use of tobacco by young persons.

The House of Peers having passed the bill, the president of the House said: "Since there is no objection, the original bill stands approved."

By proclamation of the Emperor of Japan, the bill became the law of the land and went into effect in April, 1900.

The words of the prohibition are: "The smoking of tobacco by minors under the age of twenty is prohibited", and penalties are attached.

EVIDENCE AGAINST ALCOHOL

By Prof. M. A. Rosanoff and A. J. Rosanoff, M. D.

ALCOHOL is a definite chemical substance, which has certain well defined effects upon man's physical and mental faculties. What are those effects?

This much can now be considered as firmly established:

First, alcohol impairs every human faculty; (2) the higher and more complex the human faculty, the more pronounced is the effect of alcohol upon it; (3) the effects of alcohol are cumulative; that is, its continuous use, even in comparatively moderate quantities, impairs the faculties at a rapidly increasing rate.

Moderate amounts of alcohol taken with a

meal effect a very considerable lowering of the capacity for doing muscular work. The widespread notion that moderate drinking with meals helps a laborer do his work, is false.

Moderate drinking retards to a very considerable extent the activities of life that are intermediate in complexity between purely muscular and physical work. The widespread notion that a drink "braces one up" and makes one do such work faster, is false.

Moderate drinking reduces considerably an artisan's efficiency. Its effect is cumulative and the losses caused by it increase as time goes on. The widespread notion that moderate drinking helps an artisan in his daily work, is false.

Moderate daily drinking reduces considerably the rapidity with which habitual associations of ideas are formed in the mind. The effect of alcohol is cumulative, and increases rapidly as times goes on. The notion that alcohol "stimulates" a person to his mental work is surely not corroborated by facts.

Free associations of ideas are affected by moderate daily drinking even more than the simpler habitual associations. The effects of alcohol on free associations of ideas is cumulative.

Ordinary memorizing is greatly retarded under the influence of moderate daily drinking. This conclusion is entirely corroborated by a set of twenty-seven experiments carried out by A. Smith in 1895.

Among the eighty million people in this country, 160,000 are epileptics. Of these, 32,000 owe their affliction to the intemperance of parents.

The percentage of alcoholics among men admitted to insane asylums are 28.9 for the State of New York, 30.6 for Massachusetts, 26.3 for a group of three asylums in England, and 24.9 for a group of five asylums in Austria. So the figures run everywhere, and we are very near the truth if we say that, throughout the western world, one out of four men admitted to an insane asylum is brought there by alcohol. Among women the percentages are neither so constant nor so high, for obvious reasons.—Extracts from *McClures* (Mar., 1909).

Lady (in railroad train on windy day)—Dear me! I can't get this window up.

Gentleman (behind).—I would assist you, madam, but I presume the railroad company has glued the windows down to prevent the loss of patients by pneumonia.—*New York Weekly*.

THE USE OF TOBACCO BY SUPERINTENDENTS AND PRINCIPALS

BY SUPT. J. K. MC BROOM, EXCELSIOR, MINN.

From an address before the High School Council of the Minnesota Educational Association

AS THE pupils come into the higher grades and into the high school, they are just breaking away or being gently released from their mother's apron strings. If they have never known such restraint, they are "goners" anyway, in all human probability, so I leave them out of consideration here. But the others are just finding new associations and new influences, not always good; their impulses and passions are strong, their judgments weak. Now is the time of most urgent need that every safeguard and every vigilant precaution be thrown around them to save them from the vile habits and tendencies to which they are exposed on every hand, and which, if allowed to get their grip now, will handicap the boys all their lives, and in many cases ruin them for any further effective or ambitious effort.

Chief among these vices, because usually the first to gain a foothold, is the use of tobacco; and that seems to be father of all the rest. It breeds deception at the very start, in every single case, I believe; *bad company*, and even worse meeting places; dwarfed ambition and sluggish intellect. Now if the young man has any capacity or inclination in the line of school work, we have the strongest possible appeal to his pride and his ambition in telling him that the use of tobacco is absolutely ruinous to good scholarship, in practically every case as has been demonstrated over and over and over, year after year, in every high school where the matter has had any attention; and there will be conspicuous examples in the boy's own knowledge to point the moral and confirm the tale.

But the pupil will find a fatal flaw in the logic if the superintendent himself uses tobacco; for almost inevitably, in the mind of the pupil, the superintendent is a notable example of high scholarship.

Now if, in addition to his other accomplishments, he can puff a cigar with easy grace, the boys in that school when assured that tobacco is ruinous to scholarship, will discount the assurance; of course they will. And they will discount the superintendent a good deal more.

Teaching—the best teaching—except for some rudiments and routine of instruction, is mostly a matter of tangible atmosphere; the right kind of influence, contact and association of the pupil with a strong, clean, wholesome personality in the teacher. Now if the superintendent—or college professor, or any

other school man—has one conspicuous weakness; one habit that is universally considered a very bad habit, he fails in exactly the most important point; and though he may be strong as an instructor, disciplinarian, administrator, he will yet be weak as an educator, as a maker of character. He may still be able to surround himself with a corps of strong and loyal men and women who will attend to the education of the pupils, while he attends to the administration of the system; but even then his own influence in the development of character in the pupils will be zero, or a nega-



tive quantity. Now that kind of influence may do in the management of a railroad or a packing house, but in the administration of a school it is not good enough....

Only once have I ever seen in print anything by way of excuse or apology for a school man's use of tobacco. That was a well written—or speciously written—editorial in a school journal. I think it was as able a showing as could possibly be made for that side of the case. It consisted of five points.

(1). There are worse vices than using tobacco.

What a conclusive, crushing, overwhelming avalanche of logic! If a man steals a horse, let him off, and let him keep the horse, because another man steals a team.

Some teachers and others,—I suppose the editor was aiming at those who can't appreciate the flavor of a good cigar, or the delicate aroma and wholesome and hygienic effect of second hand tobacco smoke when they have to inhale it after it has been through some one else's lungs and mouth and nose. Some people, you know, can't appreciate a good thing like that, even when half suffocated by it; and the editor says they sometimes overdraw the picture of mental, moral, and physical degeneration following the use of tobacco, and that spoils the preaching. Therefore, the superintendent is justified in using tobacco, as a natural consequence of course. Now I must own up that the logic by which that conclusion follows the premise is beyond my depth.

(3). Many excellent and able men use tobacco.

It is true—pitably true. I believe I do no violence to good English in saying it is dreadfully true; for the most dangerous influence by far tending to switch boys to the wrong track at this critical period, and start them down the toboggan slide; the influence that is hardest for parents and teachers to counteract, is that of pernicious example in high places; therefore the stronger the superintendent in other ways, the more dangerous and deplorable the influence of his example if he uses tobacco.

(4). If the teacher does not use tobacco in public; if he keeps it out of sight, the habit should not be counted against him.

Excuse extraordinary! For of all the subsidiary vices that swarm in the trail of tobacco smoke, in the case of the amateur, the first and worst by far, is the skulking, sneaking deception, and often the manly, straightforward lying, by which he thinks he can deceive parents and teachers. He doesn't believe in the public use of the weed either. Then why should we recommend in the superintendent exactly the thing that most we deplore and condemn in the pupil? But suppose the superintendent does not indulge in public; is there a man, woman, or child in the town who does not know all about it? Of course the people know. Then isn't he, in his secretiveness, offering the boys exactly the example best adapted to the early stages of the habit?

(5). Though the pupils who tamper with tobacco are invariably badly damaged, and and many of them wrecked, the superintendent who indulges isn't affected that way, for his greater maturity protects him.

That would hardly be important even if true; for we are not greatly concerned, just now, for the welfare of the superintendent;

we assume that he is able to look out for himself. Nevertheless, there is ample evidence, medical and otherwise, that even a moderate use of tobacco by a mature man is a very bad thing for him. Most of you have probably noticed the paragraph that has lately been going the rounds of the press, giving the experience of Burbank, the "plant wizard". He says: "To assist me in my work of budding—work that is as accurate and exacting as watch-making—I have a force of some twenty men. I discharge men from this force at the first show of incompetency. Some time ago my foreman asked me if I took pains to inquire into the habits of my men. On being answered in the negative he surprised me by saying that the men I found unable to do the delicate work of budding invariably turned out to be smokers and drinkers. These men, while able to do the rough work of farming, call budding and other delicate work 'puttering,' and have to give it up owing to an inability to concentrate their nerve force. Even men who smoke one cigar a day I can not intrust with some of my delicate work."

I will not use time to pile up more evidence of that kind, although there are mountains of it. We are not looking after the longevity of the superintendent. If he wants to overwork his anatomy with strong coffee, or ice cream soda, or mince pie, we will be glad to afford him with every facility. But his use of tobacco, by reason of the influence on the pupils, is a totally different matter; and if in his case the habit does not conspicuously and immediately blunt and stunt his powers, but only lies in wait for him with a bludgeon, a few years farther on, then in his example far more dangerous because far more deceptive. The boys are not likely to take seriously a retribution so far away.—From a pamphlet issued by the National Anti-Cigaret League.

TOBACCO AND MENTAL DISORDERS

The immoderate and prolonged use of tobacco produces serious mental disorders, akin to, if not running on to actual insanity.—Dr. Kjellberg, Berlin, in *British Medical Journal*.

I know of cases where general paresis, or softening of the brain could not be referred to any other cause but tobacco.—Dr. L. Bremer, in "Tobacco, Insanity and Nervousness."

Dr. Woodward, of the Massachusetts Insane Asylum, Dr. Lizars, of Scotland, Dorothea Dix, M. Jolly, of the Academy of Science, Paris, and many other eminent persons, bear strong testimony to its [tobacco's] producing spinal and brain diseases, resulting in insanity.

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.\$0.50 each
Clubs of 50 and over..... .40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

APRIL.

"The children with the streamlets sing
When April stops at last her weeping;
And every happy growing thing
Laughs like a babe just roused from sleeping."

NO-LICENSE AND THE PUBLIC HEALTH

AMID all the discussion of the conservation of natural resources and the protection of the public health, a fact reported from Worcester, Massachusetts, the largest no-license city in the world, is illuminating. Records of the alcoholic ward of the City Hospital show that in that ward from May 1 to October 1, 1907, the first five months of the last license year, there were 169 cases. In a similar period of the No-License year, 1908, there were only 69 cases.

DRIVEN TO IT

D. H. Kress, M. D., Supt. Washington (D. C.)
Sanitarium

A TEMPERANCE wave is sweeping over the United States,—a movement due not chiefly to a desire to help the other man, but largely to the growing belief that it is necessary to banish the traffic as a measure of self-preservation....

For many years, men and women who loved their fellows, seeing the dangers that threatened individuals and nations because of the increasing use of alcoholic drinks, made personal appeals to their countrymen, emphasizing the physical, mental, and moral degenerative influence of the traffic; but to all of these entreaties and appeals a deaf ear was turned by the vast majority of the population. There was a general and indefinite assent to the proposition that alcohol is necessary, damaging a few unfortunately constituted individuals, and occasionally, perhaps, causing crime and damage to property; the advocates of temperance were branded as alarmists.

But these years of patient seed-sowing were not entirely wasted, for some of the seed from lectures and school physiologies fell in favorable ground, grew, and bore fruit. Shrewd business men, having received such instruction in their younger days, were led to make close observations of the effects of alcohol on their employees, and some of them have, in accordance with their observations, adopted business policies that seem almost revolutionary.—*Life and Health*.

"SHINE INSIDE"

The following valuable contribution to the ideal of a true gentleman is taken from the February number of the *Locomotive Firemen and Engineers' Magazine*.

"In the large cities of almost any country one of the familiar sights is the bootblack's sign 'Shine Inside.' It is a business proposition with him, but its application to much wider thought can be made by one who notices it and has a moment of meditation and retrospection.

"The question of 'shining' is one of great importance, and we all put much stress upon it. Every man who is self-respecting and broadminded wishes to gain the regard and esteem of his fellowmen, but in this 'shining' we are apt to be too eager to 'shine outwardly.'

"It is recognized as one of the essentials of business success to appear neat and well groomed. No man in these days who does not give careful attention to his personal appearance can obtain much attention from the world at large. This does not necessarily mean that a man is measured merely by the clothes which he wears, but it does mean that a man's capacity and character are strongly indicated by the care which he gives to his personal appearance. This is commendable; but care should be taken that men do not allow themselves to become contented with merely appearing neat. The real sources of character and motives of conduct lie *within*. We need to have a more earnest purpose to live clean lives, so that clean and well-made clothes will be merely an index to the *really clean* man within us. This is to be a gentleman.

"This is what made John Halifax such a lovable character, fascinating every reader of the charming story when it was so popular a half-century ago, showing him to be the true definition of the man who 'shines inside.'

"A gentleman is one who is considerate of women, children and aged persons, who is too brave to lie, and too generous to cheat, and who takes his share of this world's goods and

allows others to have theirs. After all it is only the man who 'shines inside' who is true to the core, who has lasting happiness. Though there is much in life to make us skeptical of others, nevertheless it is one of the incentives to nobler action to realize that all about us are men, in various pursuits of daily doing, who are generous, honest and clean. It is not only true of men, but of institutions if they are to have any abiding place in the annals of history, they must 'shine inside.' "

TOBACCO AND MORAL RECTITUDE

AFTER quoting at length from the national therapeutic standard, the United States Dispensatory, to the effect that chronic tobacco poisoning gives rise to depression of the nervous and circulatory functions, enfeebled digestion, defective vision and color-blindness, insanity, etc., Matthew Woods, M. D., continues:

"So much for the physical effects. There are other injuries, however, inflicted upon the victim of the tobacco habit, especially during adolescence, that have not been sufficiently emphasized by medical and educational writers; and yet these work greater harm to the race than those that have to do with mere physical well-being. We have reference to the debauched state of mind, alterations of standards of rectitude and chastity, the effect that the use of tobacco has upon the morals of growing boys and young men, and evidently also upon those engaged in the business as manufacturers, as is indicated by the fact that the tobacco traffic is the only one that almost universally uses obscenity as a means of furthering the sale of its wares. The suggestive and salacious picture is a part of its stock in trade, almost everywhere and in every land. . .

"Is there a faculty presiding over continence in the untarnished brain of youth, and does this particular drug paralyze or impair it? This is the question to which I would like to attract the attention of the profession in this particular paper. I have been appalled by the revelations made to me in this matter.

"Reverence, respect for authority, or social purity, seem to a great extent to be banished from the minds of youth addicted to the tobacco habit, and the world is but slowly awakening to the fact that they are kindred vices, for some physiological reason inseparably united."—*Journal of Inebriety*.

Gen. Baden-Powell gave his experience in smoking to a meeting of the International Anti-Cigarette League at Leeds. He had

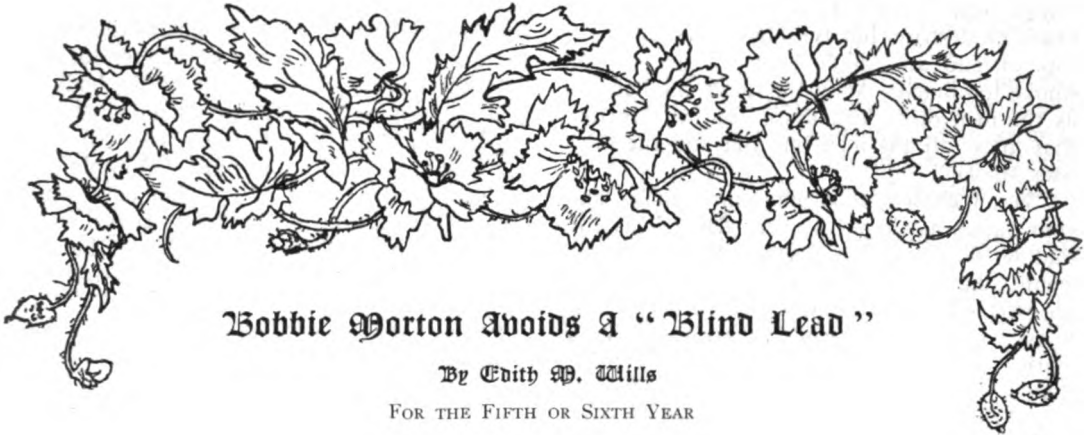
learned to smoke when he was young and foolish, but he gave it up when he went in for rifle shooting. After giving it up, he became a very fair shot. When he went to the West Coast of Africa, the most unhealthy climate in the world, he was advised to smoke at night to keep away mosquitoes. But after the third night he "chucked" away his pipe, and went through the campaign without tobacco, and as far as he knew he was the only one out of over three thousand men who did not get fever. In the campaign in Matabeleland he learned that scouts did not smoke because it destroyed the power of smell and injured the eyesight. Smoking is not necessary for men, but it is very bad for boys. No boy ever takes to smoking because he likes it, but because he wants to look like a man. Instead, said the General, he simply looks like a little fool, and when he smokes for fear of other fellows laughing at him, he shows that he is a little coward as well.—*Queensland Alliance News*.

Judge Stubbs of Indianapolis names twenty-two great business establishments which refuse to employ boys who smoke cigars. The list includes Swift and Co., and Marshall Field and Co. of Chicago; Wanamaker's of Philadelphia, and seven big railroads. He says that the list might be extended to include hundreds of other small plants and establishments, showing that the cigaret is a serious if not fatal handicap to highest business success.

THE PIPE AND THE DRINK

AMONG the hundreds who started to lead a better life during the recent great evangelistic campaign in Boston, were many drunkards. "We asked Mr. Toy, one of the evangelists", says a writer in the *Christian Endeavor World*, in regard to his experience with drinking men that got converted. Do they stand or do they drop back into their old habits?"

"On this subject Mr. Toy has very positive opinions, based upon extensive observation and experience. Drinking men, as a rule, he said, are also users of tobacco. If, when they are converted, they hold on to the tobacco habit, they most frequently go down. The physiological explanation of this fact probably is that tobacco causes a certain amount of thirst, a craving which the victim is tempted to satisfy by liquor. Hence Mr. Toy urges that the drunkard cut off the tobacco also. Drink and the pipe go hand in hand, and lead many a man to destruction."



Bobbie Morton Avoids A "Blind Lead"

By Edith M. Mills

FOR THE FIFTH OR SIXTH YEAR

WHAT ARE we going to have in our pleasant hour tonight, Mother?" asked Bobbie Morton when they rose from dinner. "Oh, I know", as his eye caught sight of a new magazine. "You must read to us."

The Morton family had a most delightful custom of spending the after-dinner hour in pleasant companionship. Then when they were rested, Bobbie took up his lessons and Mr. and Mrs. Morton, whatever suited them. This "pleasant hour", as they called it, was the happiest one of the day. Sometimes there were games, sometimes, as tonight, Mother read a story while Bobbie and Father rested before the open fire. Again they talked over the happenings of the day and father and mother listened sympathetically to Bobbie's tale of some blunder he had made, or proudly, as he told how high his class standing was, how his ball team prospered, for he was quite a favorite and had been selected to captain the younger boys' nine, or of the chance which had been offered him as a messenger in the bank when vacation came. Then there were many discussions of what he was to do by-and-by. He intended to earn a scholarship to pay his tuition so he could go to college, and to work summers to help out, for the Mortons were not wealthy, and, besides, they thought it would be a good plan for him to help himself. He had ambitious dreams of being an athlete, and of winning honors in his books, too. What days those were to be! These planning hours were the happiest of all.

Bobbie passed the magazine to Mrs. Morton and she read a little sketch of the Zeigler expedition. Bobbie was much interested in the story of how the "America" bravely charged the ice floes as she tried to make her way toward the Pole, and of the way in which her wise Captain Coffin avoided the "blind leads", or lanes of water in the ice fields which

might be closed at the furthest end. All of these leading south could be trusted to lead to open water, but those to the north were dangerous because at any time the strong winds might force the ice masses together and the vessel be crushed as the "Jeannette" and many others had been. Every time the vessel waited for a safe opening, the sailors, although they had never sailed the polar seas before, freely gave their opinions as to how the ship ought to be managed. One day there were two of these "blind leads" and the sailors wanted to proceed through one which seemed to lead to open water beyond. The captain in the "crows-nest", looking through his glass far out over the ice fields, saw that neither led to clear sailing and waited, much to the impatience of those on deck. Within a few hours a strong wind drove the edges of the ice of that "lead" together, and opened the other through which the America sailed safely toward her goal.

When the thrilling little sketch was finished, Bobbie said, "Just to think! If the captain had done as the sailors had wanted to, may be the 'America' would have been crushed like the others. I should think they would have known that the captain could see farther with his glass, and would know more about what was safe than mere sailors who had never been there before."

"Do you know", said Mr. Morton to his wife, "I have lately noticed two of Bobbie's mates sailing into a 'blind lead'?"

"Why Father Morton", said Bobbie. "Who were they and what do you mean? There aren't any ice-fields in Marion."

"There may not be any ice-fields in Marion," said his father, "but there are dangerous 'blind leads', that's sure. The boys I mean were Tom Rand and Frank Jones, and they were smoking cigars in Tawney Alley."

"I can't see why you call that entering a

"blind lead'", said Bobbie. "'Blind leads' crush or destroy, but the boys say smoking is lots of fun and don't hurt you unless you smoke too much. Why shouldn't the boys do as the men do? You know, Father Morton, that 'most all the men but you and the minister smoke.'"

"Yes, I know a good many men smoke, and your father is thankful every day of his life that he doesn't. But perhaps you think you would like to have fun smoking, too. If you are perfectly sure you want to we might talk it over and see if it can't be arranged. Your mother and I want you to have everything that is desirable. If smoking will make you more healthy and successful, and make a more manly man of you, or even if it doesn't help you in these ways but will make you enough happier to pay for the possible losses, we certainly want you to learn it."

Bobby gasped. Who had told them he wanted to smoke, and, truth to tell, had tried it a few times? If they would give their consent that was all he wanted, and he said rather eagerly, "Do you mean that you are willing to have me smoke, and can I do it at home?"

"Yes", said his father, "on one condition. Before you direct your craft into what looks to you like a safe and attractive opening, we want you to make sure whether it opens toward the south or the north, and to look through the long-distance glasses of some men in the crow's-nest who have sailed these seas before you, as well as take the word of your deck-hand mates."

"That's a great idea", said Bobbie, who always had a vivid imagination. "I want to reach Health, Success, Manliness, and Happiness. First we train our glass to see if smoking leads through to Health. I suppose you have sailed this sea longer than I have; at any rate (proudly) you are strong and well as can be, so you might tell what you can see from your lookout."

"All right", said his father, quite ready to play the game. "We will take the short range first. I see a boy growing very fast. Let's see, how much did you gain last year?"

"Two inches in height", said Bobbie, lifting his chest, "and everything else in proportion."

"That's a pretty stiff pull on your vital organs, isn't it," said his father. "Think of the extra work they have to do. The stomach must digest very large quantities of food, the lungs furnish extra oxygen, and the heart drive the growing volume of blood which carries the extra building materials to all parts of the body. Most important of all, your brain and nervous system, the part with-

out which the rest is of no account, must be fully provided for or never come to their best. Besides all the other extra work, these organs have to keep up with the rest of the body in growing and making repairs. They must continue it for three or four years, too. No wonder that even under the most favorable circumstances the hearts of growing boys sometimes gives out and heart disease comes on."

"My, what a big job my body has on hand!" said Bobbie. "I never thought of that before."

"Now," said the "Captain", "we turn our glass on the cigaret 'lead' to see if it will probably let you through safely. What is there in all forms of tobacco, and what is its nature?"

"Nicotine", said Bobbie, promptly, "and it is as poison as prussic acid, but it goes off in the smoke."

"Half of it does", said his father, "but some of it is dissolved in the mouth and goes into the stomach where it affects digestion and hurts the appetite. How, then, can the body secure sufficient good food for rapid growth."

"It does look dubious", said Bobbie.

"Practically every boy who smokes cigarets draws the smoke into the air cells of his lungs; the blood instead of being purified is poisoned, and the red corpuscles can get only partly enough oxygen for the needs of the growing body. The lungs and air passages are injured, too. Do you see any reason why the smokers often look pale?"

"Poor blood", said Bobbie, succinctly. "Do you see anything more?"

"Yes," said Mr. Morton, "once the nicotine is put into the body it can't help seriously affecting the brain and nerves and through them the heart, although that organ is already working to its limit. It goes faster and slower and at least half the boys who smoke cigarets habitually, get 'trotting heart.'"

"Pump damaged. Nerves going to pieces", said Bobbie.

"I fear so", said his father, "but you needn't take the Captain's word for that. Observe some of the smoking deck-hands, the very boys who say smoking doesn't do any harm. Are they growing as fast and as well as they ought? But we will turn to the long-distance range a minute. Few of the men above thirty-five who have smoked all along, have first-rate eyesight, and many have dyspepsia, weak hearts, tremulous muscles, and the like. Occasionally they die in the prime of life."

"Looks as though even the deck-hands could see that this 'lead' doesn't conduct one

to Health", said Bobbie, "but maybe it's a better one so far as Success is concerned. Look again, Captain."

"I see", said the "Captain", "a boy cigaret-smoker who plans to succeed as an athlete, a scholar, and a business man, one who must make his own way in the world. He is thirteen years old and expects to graduate from the grammar school next spring, from the high school when he is eighteen, and from college when he is twenty-two. I see that Professor Seaver, Professor McKeever and many others testify that according to their experience with thousands of boy-smokers, he probably can not keep on in athletics ever through high school; if he possibly has ambition enough left to try to go to college he is likely to be at least a year late and will then have only five chances out of a hundred to be an honor man. None in fifty years ever graduated at the head of his class. Moreover, when he goes to the bank or to any other really good place to get a position where he can earn some money to help him through and a chance to be learning the business and so work up to eminence, they give one look at his stained fingers and send him away for good. They say he'll never amount to anything and they can't bother with him, and, moreover, they've had boys who couldn't get enough money honestly to buy the cigarets necessary to stop their craving so they stole it out of the money-drawer."

"I can't believe that", said Bobbie, with a look of disbelief and horror on his face.

"Well, my boy, go down to the bank, to the railroad office, and to our merchant, and to as many others as you like, and inquire for yourself."

"But it's only the boys who are real cigaret 'fiends' that go wrong that way. I shouldn't use many, just a few in a polite way."

"Don't forget the power narcotics have to compel increased craving for larger and larger amounts", said Mr. Morton. "If a boy hasn't power enough to keep from forming the habit in the first place, how can he be sure that he will not, like many others, become a

'fiend'? It's an awful slavery. I never knew but one boy to stop after he really got the habit."

"If a smoker can't be a good scholar and nobody of any consequence will give him a chance to make a business man, it looks as if the cigaret 'lead' wouldn't let me sail through it to Success", he said rather soberly. "How is it with Manliness?"

"I don't like to look", said his father, seriously, "but I will."

"I see a boy sneaking down an alley to smoke with tough boys, truants, who often tell dirty stories, play craps, stay out late nights, and sometimes drink. I see him become entirely selfish, deceive his parents, lose his high sense of honor and his love of home. The 'pleasant hour' loses all its happiness for him because he wants to go out on the street and smoke. If this young smoker goes down and



down, as hundreds do, he becomes a liar, a coward, a thief, gets where he can not be saved at all. The 'blind lead' has closed and crushed him, and at the same time has crushed those who loved him best."

"Oh, Father", was all Bobbie could say at first; then he said soberly.

"You don't need to look and see if I can find Happiness this way. I want to feel well, grow big and strong, play good games; and I mean to be a scholar and succeed. I want—", and here his voice trembled a little, "to be a good man like my father. There can't possibly be fun enough in smoking to pay for taking the chance of losing everything I want most. I mean to sail south with you, Captain."

A laugh is worth a hundred groans in any market.—Lamb, Google

Temperance Teaching in Sunday Schools*

By Margaret Slattery

THERE is first the *physiological appeal*. Boys and girls in these departments are intensely interested in themselves. When

I sit down some Sunday before a class of restless boys, and say suddenly, "I *wish* I could see my brain," they are attentive in an instant and ready for more. They would like to see their own brains. If I show them a specimen of the brain of a lower animal preserved in alcohol, or a picture and chart, their interest is increased, and their questions and comments keep me awake. When I get them to telling of wonderful things that human brain cells have conceived and carried out, I can see their deepening self-respect. As I show by the thick, heavy notched bones of the skull, nature's desire to protect this vital organ from injury, their interest shows me that they will remember. Then as step by step I lead them to see what it means if I by own free will injure my own brain, I find immediate response. They want to talk and I let them. They tell me the usual things about alcohol and cigarets and *I challenge their statements*. As I near the close of the lesson I get ready to press it home. "It is all a great puzzle to me when I think of it!" I say, "Suppose I am a young man and a glass of liquor is set before me. My companions urge me to take it. I have been taught its evils, how strong its hold is, I see the creatures it makes when it gains control and yet I take it. Perhaps I never shall again—and perhaps it will be just the *beginning* and I may become like—Here is the strange thing. *I* have done it to myself. I need *not* have touched it, but I did." I love to remember the discussion on *will* that followed this line of thought once! I know those boys went from the class with a deeper self-respect and that they remembered for some months at least that "God will *help* me but He can't *stop* me."

My second *appeal* I make *through* the avenue of *common sense*. When men invest, they do so with the idea of getting out more than they put in. Men who invest their earnings in liquor can never hope to do it.

One day I asked a class to name what went into the bottle in which a laboring man invested his hard-earned money. They said first his money; if he kept on investing, his position, his health, his good name, his char-

acter, "about everything worth while." I asked what he really got out of it. They seemed deeply impressed by their own answers. We then had a fine discussion as to what we could do about men making such investments. If a man's money is his own and he earns it, hasn't he a right to invest it as he chooses? Have I any right to say what he shall choose? On the other hand, has a city a right to say that certain things shall not be offered for sale within its limits? Why? [See Eliot, pp. 49-51, Dec. JOURNAL.]

One of the very strongest *appeals* to the older classes in the Intermediate department can be made *through knowledge*. The organization and development of the anti-saloon league may be made very much alive through the stories of the fine men who have been and now are at work on its problems. Study the fight made by some of the southern states for prohibition and the problem that now confronts them in carrying out their vote. Some of the methods, reports and speeches of the liquor dealers and brewers make fine material for lessons with intelligent high school boys, especially if one week before they are given printed material to report upon. Every teacher of boys in Junior and Senior classes in the high school should try it. The emotional appeal is strong and has no small place in awakening men to action; but when it is re-enforced by knowledge its value is increased tenfold.

The fourth way of appeal seems to me strongest of all. It is life that awakens life and kindles interest.

Biography is one of the most valuable tools of the teacher. Have you read the life of John B. Gough recently? If not, you must. If you have, you know how real the struggle is, how terrific the fight. You know that men are fighting the same thing in the same desperate way today, and the whole great problem becomes keenly alive to you. You can no longer calmly consider it, untouched by its pain and anguish. It burns itself into your soul and because you have felt it you have something to say.

I always begin with Gough at the highest point of success and let him tell his own story. Strongest of all the strong words in his autobiography are the scathing, bitter words of scorn with which he compels you to look back with him upon his past, as from the printed page with all his power he cries, "Let it alone.

*Copyright, 1909, by Luther H. Cary. Used by special permission of *The Pilgrim Teacher*.

boys, let it alone." Jerry McAuley and Samuel Hadley and many more will help you impress what habit will do with a man, and make your boys see in a way they cannot soon forget how "bad company" can forge the chains so hard to break. But the best thing about these biographical studies is this: beside every one of these men who at last escaped, was some strong, splendid, large-hearted, Christian man, who pulled him up, held him steady and led him to find his strength in God. So as I close the lesson I try to leave in the hearts of my pupils a *desire* to do just that for such a one if he should ever cross their pathway. Few things strengthen character more than the influence of a high resolution, and I like to make them feel that in the future they are to be the "helpers" and not the "helped" among their fellows.—From the *Pilgrim Teacher*.

NOTE—Although these lessons are prepared primarily for Sunday school teachers, the day school teacher will see that they can also be very easily adapted to her purpose.

TEMPERANCE PRIMARY LESSON

FRANCES WELD DANIELSON

Let us each think of something we love to do—something that makes us happy. (This will call forth a variety of answers. Comment upon these answers in much the same way as is done with the pictures suggested above, or other pictures which you may prefer to use, the thought being to show the difference between pleasures that carry a sting with them and pleasures that bring lasting happiness.)

I will show you pictures of some things that give us pleasure. (Show picture of bread.) How does bread give us pleasure? It tastes good to us while we are eating it, doesn't it? and more than that, it gives us happiness for a great while, because it makes rich red blood that goes dancing through our bodies and keeps them strong and well. (Show picture of a box of candy.) Does this give us pleasure? Yes; we enjoy ourselves when we eat candy, don't we? But if you should eat a whole boxful do you think you would be happy all day? No; for too much candy makes us sick, and it doesn't pay to eat something that we enjoy only a few minutes, and that makes us suffer hours and days.

(Show picture of a horse.) What does a horse give us? Yes; he gives us rides, and we enjoy that while we are riding and afterwards, too, for being outdoors fills our lungs with nice, fresh air, and seeing trees, birds and flowers gives us pretty pictures to think about.

(Show picture of Christmas tree.) Surely

this made us happy last Christmas, and doesn't it make you happy all the year, too? Aren't you playing with some of the toys you had Christmas? Aren't some of you wearing things that were given you then? And isn't one of the nicest parts about Christmas seeing other people enjoy the presents you gave them? (Show pictures of a child running.) Isn't it fun to run? But suppose mother gave you an errand to do, and instead you ran just the opposite way. Would the fun last? No; for by and by you would have an unhappy feeling inside, because you had not minded. (Show pictures of children out in storm, and coasting.) Do these things make you happy? Every child loves to slide down hill, and most of you think it is fun to go out in the storm. But how would it be if you had a bad sore throat? Would the fun of being out in the storm last? Would the joy of sliding down hill go over into the next day? No; for your throat would be worse, and you would feel sick. Good times that don't last aren't the right sort of good times, are they?

(Show a picture of a glass of wine.) Here is something that most people do not like at first but which they come to like after a while if they keep drinking it, so that it gives them pleasure. It tastes more like medicine than anything else you ever tasted. But medicine makes us better—or it is intended to—while this drink brings the worst kind of unhappiness even after people come to like it. Men who drink much wine become cross and cruel and stupid. They hurt people and even kill them, without knowing it. They cannot think well. Their bodies become weak and useless. They cannot walk straight. At the first the wine tasted good and they liked it, but at the last it was as bad as the sting of a poisonous snake. (Golden Text.)—*Pilgrim Teacher*.

A SIMPLE AND EFFECTIVE REMEDY

JOHN J. HAYS, winner of the Marathon race in the Olympian games says:

"I can cure most boys of cigaret smoking in one lesson. I want to say to mothers that the best argument to advance to a son who smokes cigarets is to buy him an athletic outfit. The boy will soon learn why cigarets are harmful."

The boy who smokes cigarets will never make a home-run to any worth-while goal.—*Boy Magazine*.

Extra copies of this JOURNAL for your boys at \$.06 each; \$.70 a dozen.

THE CIGARET-SMOKING BOY

BY WILLIAM A. MCKEEVER

Professor of Philosophy, Kansas State
Agricultural College

I HAVE tabulated reports of the condition of nearly 2,500 cigaret-smoking school boys, and in describing them physically my informants have repeatedly resorted to the use of such epithets as "sallow", "sore-eyed", "puny", "squeaky-voiced", "sickly", "short-winded", and "extremely nervous".....According to Dr. Sims Woodhead, Professor of Pathology in Cambridge University, cigaret smoking in the case of boys partly paralyzes the nerve cells at the base of the brain and thus interferes with the breathing and the heart action. And yet, all this debility and more, is brought upon thousands of boys who innocently imitate the example of their elders.....

CIGARET SMOKING HANDICAPS STUDENTS

The injurious affects of smoking upon the boy's mental activities are very marked. Of the many hundreds of tabulated cases in my possession, several of the very youthful ones have been reduced almost to the condition of imbeciles. Out of 2336 who were attending public school, only six were reported "bright students." A very few, perhaps ten, were "average," and all the remainder were "poor" or "worthless" as students.....

FEW CAN QUIT THE HABIT

The more I work with these confirmed cases of cigaret smokers, the more I am convinced of the futility of attempting a complete, permanent cure. I have attempted personally to assist hundreds in their efforts to quit, and have met with many failures. Hypnotism, suggestion, and all the more ordinary methods have been resorted to with poor results. No ordinary youth confirmed in the habit can break it off without the help of some very strong outside influence, and then the struggle will be a desperate one. A typical case of the "quitter" may be represented by the following true story: One night at 9.30, I went to the door, in response to a feeble rap, and admitted a pale, 16-year old boy, who said at once: "Professor, dogged if I don't want you to hypnotize me. I smoke four cigarets every night in bed and about fifty every day and can't quit." I tried to hypnotize the dejected youth, but failed. It was an easy matter, however, to stir him emotionally, and as a result of my efforts he sprang to his feet, drew out his "makings," and presented them to me, pipe, tobacco, and all. "I am done with this forever!" he cried. "Here is my whole outfit." Whereupon he seized the pipe—an expensive one—broke it,

and threw the pieces out into the darkness. "I will let out my blood with my own knife before I'll ever smoke again," he exclaimed. "I wish my mother were here!"

This boy was tremendously in earnest, and with the red blood crowding into the region of his brain, where I had helped him to place it, he believed that he would be victorious. But, alas for the sequel! The emotion gradually cooled off, and during the next day the old craving gnawed at his vitals until late in the evening when—he borrowed some "makings" and took a big smoke. *Nothing else then looked reasonable to him.* And this young man is still hard at it.

METHODS THAT HAVE HELPED

I have advertised widely for *bona fide* cures of the more pronounced cases, but have had few replies. Out of about 200 who had met with some success, I gleaned the following: (1) By showing the boy in every possible way he is hurt and hindered by the habit, arouse his determination to quit. His strong, earnest desire to reform is the first prerequisite. (2) During the course of the effort do everything possible to build up in the boy a strong, vigorous body. He is usually under-nourished as a result of the practice. (3) Fix for him the strongest possible incentive to quit, such as a money reward or other valuable gift, a social advantage, the promise of a coveted journey, or excuse from the performance of certain disliked tasks. (4) Several have found religious conversion a most effective means of salvation from this vicious habit. But in such a case permanent reform will be at the expense of much careful, vigilant work after the first change of heart.

PREVENTION THE PRACTICAL SOLUTION

Prevention is the only practical solution of this cigaret, or boy-smoking, question. Boys take up the practice in innocence, "just for fun," and are usually its victims before the matter is detected by their parents. Any normal, healthy boy will learn to smoke if thrown among young smokers without any caution or restraints from those in authority over him. After the parent discovers the fault there is often a pathetic struggle, perhaps attended by many maternal tears, and then a compromise. That is, the boy tries in vain to quit and finally agrees to compromise on a pipe. But he will likely violate every rule of good conduct ever taught him by his parents before he will give up the habit entirely.

Parents must learn more about the nature of this insidious habit and prevent its being taken up. The following methods of prevention have been reported effective: (1)

Begin to talk to the boy as early as his sixth or seventh year about the matter and make a strong appeal to his sense of honor. Do not be too insistent and threaten to inflict punishment, but indicate rather that you think him too worthy to take up such a practice. (2) Offer to set aside some material or pecuniary reward to be paid when he becomes of age, provided he continues his total abstinence, and add to this the sentiment that he may then do as he pleases. Never ask a boy to pledge away in advance the years of his manhood. (3) Remind the boy in every possible way how much concern you have for his well-being, and how much you are willing to sacrifice for him, and how anxious you are to be true to him and to help him. He will then likely never break faith with you. (4) Keep in touch with the boy and know at all times his joys and hopes and aspirations. Be his companion and advisor and true friend and he will respect your wishes in regard to him.

—*The Industrialist.*

NOTE: The preceding practical article is part of a valuable pamphlet which should be in the hands of every parent, and day and Sunday school teacher. This and others of great value can be obtained in any quantity at the rate of one penny each. Address William A. McKeever, K. S. A. C., Manhattan, Kansas.

BOOK LIST

THE COMMITTEE appointed a few years ago by the American Academy of Medicine to investigate the teaching of hygiene in the public schools, said in their report, (1905) that probably no other kind of text-book had evolved so rapidly to the degree of merit attained by the school text-books on physiology and hygiene. The *Gulick Hygiene Series* since issued might be called a further evolution, if they could be included in the same class of books, that is, text-books, or manuals of instruction. This they are not, because they do not contain a systematic presentation of the elementary principles of the subjects involved in physiology and hygiene.

This statement, however, is in no sense a detraction of the books, the merits of which could scarcely be surpassed for the purpose and place they are well adapted to fill. They are to physiology and hygiene what the supplementary geographical and historical readers are to the serious study of those topics.

The fifth book of this series "Control of

Mind and Body"*** is most fascinating reading on the topic it presents, the nervous system. The results of the most recent experimental investigations are presented in the story form. The subjects of attention, choice, will power, habit and character which necessarily receive too brief attention in the comprehensive text-book, are here enlarged and presented in a manner that well fulfills the author's aim to make them inspiring.

Truths concerning the effects of alcohol and tobacco are fully and clearly brought out without bias or distortion, and in the same interesting way as all the others.

It will be an invaluable aid to the teacher in creating interest and arousing a curiosity to understand more perfectly the adaption and workings of that marvelous part of the human body, the Nervous System. But it ought not to be confined to school use, because it contains so much that all boys and girls should know, and a large proportion have left school before they reach the grade in which a fifth book in hygiene is introduced. It ought to be in every library and in every reading course for young people. Parents should provide it for the boys and girls who have left school without receiving careful instruction on the subjects it treats.

***Control of Mind and Body by Frances Gulick Jewett. 267 pages, illustrated. Price \$5.00. Ginn and Co., New York.

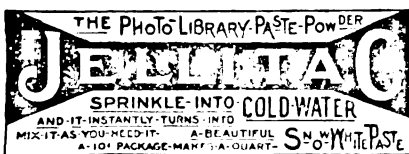
THE Gulick Hygiene Series

awakens the interest of children and produces unprecedented results in the teaching of Hygiene and Civic Reform. A child reads intelligently, absorbingly and enthusiastically whatever appeals to his interest. This appeal is something entirely new in a series of hygiene and physiology texts, and accounts in a large measure for the unusual success of these books.

GINN & COMPANY

Publishers

Boston New York Chicago London



Travelling Loan Exhibit

—OF—

Attractive, Anti-Alcohol CHARTS

ENTIRELY NEW

For Pupils, Teachers, Professional
People, the General Public

Exhibit consists of 25 colored charts, size 22x28 inches, prepared by the Scientific Temperance Federation for exhibition at the International Anti-Alcohol Congress at Saratoga. They illustrate the Relation of Alcohol to Crime, Disease, Heredity, Degeneracy and the Disabilities of School Children; its Influence upon Mental and Muscular Working Ability and upon Athletics; its Relation to Tuberculosis and other Infectious Diseases; the decline of the Use of Alcohol in Medicine.

The salient facts are strongly set forth by means of attractive photographs and colored columns, blocks, etc. Based upon reliable scientific work. Entirely free from the objectionable physiological details found in the old fashioned charts.

HOW USED

By Lecturers at Teachers' Receptions and Institutes and in Normal Schools, at Conventions, and other Public Meetings; in Sunday Schools on Temperance Sunday, etc.

By Local Temperance, Grange, and other Organizations as follows: A hall of suitable size may be secured and the charts hung therein, advertising the fact thoroughly through the town or city, and inviting the public, including particularly public school teachers and press representatives, to the exhibition. An hour, afternoon and evening, may be given to short, pointed addresses on practical subjects connected with the temperance question. Temperance literature may be distributed.

Reports of renewed interest are coming in from places where the charts have been exhibited.

PRESS AND PERSONAL COMMENT ON EXHIBIT

More than 1,000 persons, including 300 school boys, saw this exhibit at St. John.—Private letter from St. John, N. B.

I must congratulate you on the excellent exhibit (Christian Endeavor Biennial Convention, Lynn, Oct. 19-24, 1908). The appeal to the eye brings facts home more strongly than in any other way, and those striking charts preach with great force for total abstinence.—Private letter from Boston, Mass.

The exhibit of scientific charts at the Saratoga World Centennial Temperance Congress was the most convincing demonstration of the evil effects of alcohol upon the human family that I have ever seen.—Edward H. Emory, Field Secretary of Maine Civic League.

One of the most interesting and instructive exhibits at the Provincial Teachers' Association in session in the Normal School Building, is a collection of beautifully colored charts with heavy black lettering, making a very effective and catchy appearance. A close study of the charts impresses one with their lack of exaggeration and apparent truthfulness as well as the careful investigation necessary to their preparation.—Daily News, Truro, N. S.

Send for full information to

THE SCIENTIFIC TEMPERANCE FEDERATION,
23 Trull Street, Boston, Mass.

Illustrated Lecture

A New Story in a New Way

THE scientific side of the alcohol problem is here presented in a popular lecture which appeals to the eye as well as to the ear by means of 68 fine new lantern slides. These include interesting pictures, a number in colors made from original drawings representing the results of scientific experiments, and a few attractive physiological plates; accompanied by carefully prepared manuscript address.

Most important phases covered. Nothing objectionable.

AVAILABLE AND SPECIALLY DESIRABLE FOR

NO-LICENSE CAMPAIGNS; PUBLIC TEMPERANCE MEETINGS HELD IN CHURCHES OR BY TEMPERANCE ORGANIZATIONS; LABOR UNIONS; SOCIETIES OF CHRISTIAN ENDEAVOR; LOYAL TEMPERANCE LEGIONS; PATRONS OF HUSBANDRY; LYCEUMS AND CHAUTAUQUAS; PARENTAL OR INDUSTRIAL SCHOOLS; SOCIAL BETTERMENT WORKERS; AND FOR TEACHERS' INSTITUTES AND RECEPTIONS, and HIGH AND NORMAL SCHOOLS.

MAIN TOPICS ILLUSTRATED

ALCOHOL AND MUSCULAR WORKING ABILITY

Slides showing ergograph, effects of alcohol on muscular work, athletics, Marathon runners, Stadium at Athens, international championship, etc.

ALCOHOL AND MENTAL WORK

Reaction time, signal station, alcohol and memorizing, alcohol and scholarship, prize gunners on U. S. S. Albany, etc.

CELL LIFE—EFFECTS OF ALCOHOL

Typical cell, cells building tissue, nerve and muscle cells, association fibres, effects of alcohol on fibres, alcoholism and crime, etc.

EFFECTS OF ALCOHOL ON VITAL RESISTANCE

Amoeba life, white corpuscles, destroying disease germs, tuberculosis, Metchnikoff and Laitinen, resistance to disease, etc.

ALCOHOL AND THE RACE

Hereditary effects of alcohol, Rum and Topsy, and Nig and Topsy, alcohol and disabilities of school children, effects on growth and development, etc.

ALCOHOL AND THE COMMONWEALTH

Reducing taxes, coming storm, Liberty, etc.

COMMENTS ON LECTURE

Dr. T. Alexander MacNicholl, of New York: "The scientific facts are well presented and clearly stated. The slides suggested amply illustrate the text."

"I write to bear witness to the merit of the inspiring and instructive lecture given before the churches of Neponset. Unique in conception; scientific in presentation; beautiful in illustration. It held the wrapt attention of old and young alike."—Rev. Charles H. Washburn, Trinity Congregational Church, Neponset, (Boston), Mass.

The Following Speakers Can Be Secured (or Slides and Manuscript will be rented).

Miss Cora Frances Stoddard, Miss Edith M. Wills.

FOR BOSTON AND VICINITY ONLY

Rev. Richard Wright, Hon. John Shea, Mr. Robert H. Magwood.

THE FOLLOW-UP PLAN

for educational work doubles the value of the lecture to the community. Suitable literature.

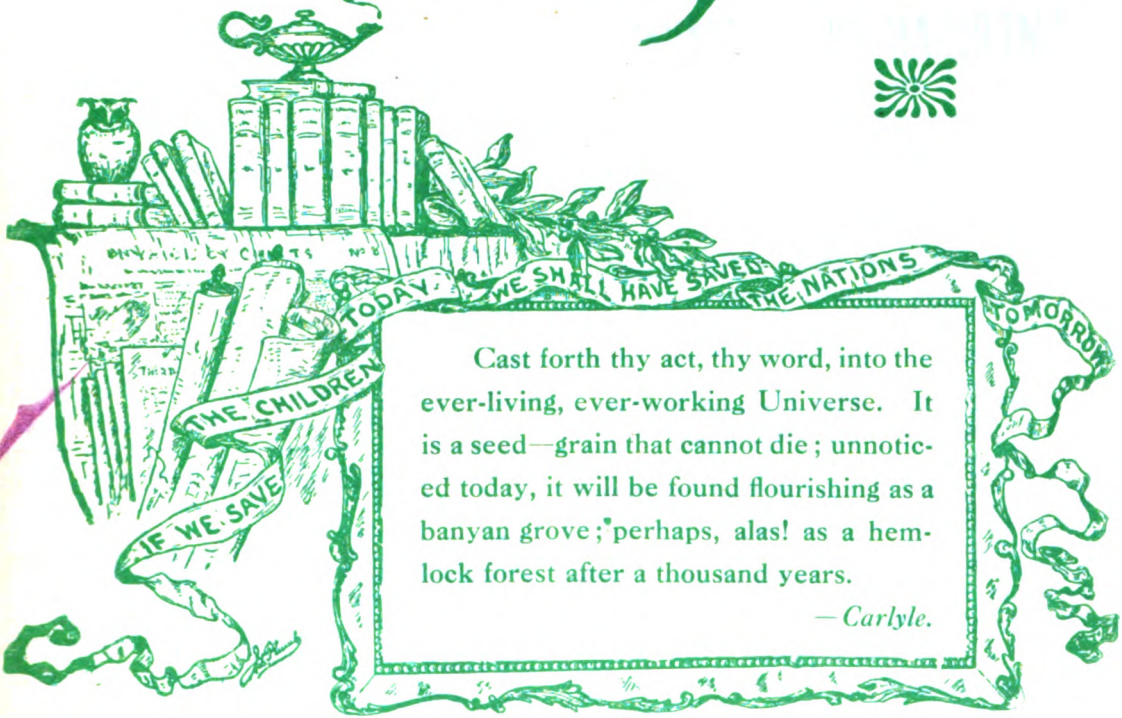
Terms very reasonable.

Full information on request.

THE SCIENTIFIC TEMPERANCE FEDERATION,
23 Trull Street, Boston, Mass.

592
Rec'd
APR 23 1909
B. P. L.

THE SCHOOL PHYSIOLOGY JOURNAL



Cast forth thy act, thy word, into the
ever-living, ever-working Universe. It
is a seed—grain that cannot die ; unnotic-
ed today, it will be found flourishing as a
banyan grove ; perhaps, alas ! as a hem-
lock forest after a thousand years.

—Carlyle.

New Century Series

— OF —

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fullness and accuracy of the treatment in regard to the nature and effects of alcoholic drink and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

Beer, Wine and Tobacco Leaflets

Alcohol and the Individual

By HENRY SMITH WILLIAMS, LL. D.

(Reprint from McClure's, 32 pp.)

\$.05 each. Per dozen, \$.50

Dangers in the Use of Beer

By HUGO HOPPE, KONIGSBURG

The most comprehensive monograph on this subject yet published. Shows effects of the use of Beer on mental and muscular working ability; its effects upon health; and its relation to sociological problems.

Dangers in the Use of Beer (18 page), \$.05	per 100	\$2.50
Commercial Fictions vs. Facts about Beer		.35
They Want Your Money (Beer Leaflet)		.45

False Claims for Wine	per 100	\$.30
Wine a Peril to Childhood		.25
Wine Does not Drive out Drunkenness		.25
Alcoholism in Wine-growing Countries		.25
Alcoholism and Tuberculosis		.30

Power of Tobacco Habit	each	\$.20
Why the Cigaret is Especially Harmful		.20
Use of Tobacco		.05
Boy and the Cigaret		.05

Best Books Ever

Song Knapsack, 142 songs for schools, 10c; \$1 doz.
"Pat's" Pick, 124 pp. All the music to the Knapsack songs. Sweetest, sanest, jolliest song book made. Cloth, 50c.
Hints from Squints, 144. Hints comical, hints quizical, hints pedagogical, hints ethical, hints miscellaneous. Cloth, 50c.
Civil Government of U. S., by W. C. Hewitt. 118 p., complete, new, cloth, 25c; \$2.40 per doz.
Primer of Pedagogy, by Prof. D. Putman. Just what the times demand. Cloth, 122 pp., 25c.
Manual of Orthography and Elementary Sounds, by Henry R. Pattengill. Up-to-date. 104 pp., 25c.
Morning Exercises and School Recreations, by C. W. Mckens. New, 267 pp., 50c.
Memory Gems, 1000 Graded Selections, by H. R. Pattengill, 143 pp., linen morocco finish, 25c.
Primary Speaker for First and Second Grades, by Mary L. Davenport. Fresh, elegant. 132 pp., 25c.
Old Glory Speaker, containing 80 of the choicest patriotic pieces written. 126 pp., 25c.
Special Day Exercises, 165 pp., 25c. Best medicine ever to cure "that tired feeling" in school.

Address,

HENRY R. PATTENGILL

LANSING, MICH.

• CONTENTS •

	Page
A Conclusion from Science and Experience	129
A Quest of Modern Knights	131
Parental Responsibility for Children's Well-being	132
Why a Pledged Abstinence	134
Take Heart and Go On	135
Disinfect the New Home	136
Editorials	138
Brain and Nerves as Masters of Efficiency—Lesson Suggestions	140
Program of International Congress	141
Nicotine the Real Toxin of Tobacco Smoke	144

SPECIAL OFFER

Alcohol and the Human Body

By HORSLEY and STURGE

The Greatest Popular Book on the Physiological Aspects of the Alcohol Question.

Revised to Date and Enlarged

Indispensible to Educators and Social Students; to V. M. C. A., Sunday School and Temperance Workers.

Now Within the Reach of All

Price reduced from \$1.65 to \$0.99

New Combination Offer

Alcohol and the Human Body } Only
 and } \$1.50
 Physiology Journal till June 1910 }

SCHOOL PHYSIOLOGY JOURNAL, 23 Trull St., Boston, Mass.

Please mention the School Physiology Journal when writing to advertisers.

Digitized by Google

School Physiology Journal

Vol. XVIII

BOSTON, MAY, 1909

No. 8

Success

By Hezekiah Butterworth

O MY America, whose flag
Peace thrones amid the sky,
Beneath whose folds 'tis life to live
And noblest death to die;
The time a higher aim demands
For cycles yet to run!
Achievement nobler fields commands
Than Charlemagne's heroes won!
War folds her tent; humanity
Unites the races, and for thee,
O Youth, the silver bugles call
A grander march from sea to sea;
And that is best which most inspires
And fills the soul with high desires.

Success leads onward to success:
Young Knight advance, fulfill the dream
Of saints and sages;—thee awaits
The Century supreme:—
That man his birthright may be given,
And toil its dues, and Virtue crown
All men who strive and all who've striven,
The highest standard of renown.
Not wealth, but welfare, is success.
Beneficence life's crown must bring,
For nothing lives but righteousness
And character is everything!

—Selected.



A CONCLUSION FROM SCIENCE AND EXPERIENCE

BY W. PFAFF, M. D., KUCHEN, GERMANY

In a work on the alcohol question from the physician's standpoint, published in 1906, Dr. Pfaff reviewed the hygienic and physiological findings of the subject up to that time, and then adds the following observations as to the results of abstinence in his own personal experience:

IT remains for me to say that the preceding contribution is the fruit not alone of my study of the alcohol question, but of my own personal experience. Partly on account of physical troubles, and partly to see if I could carry out a program of abstinence, I gave up, on the first of January, 1903, all use of alcohol and since then have lived entirely without it. Thus I have been able to know the difference between the influence of alcohol and a life of abstinence.

TESTING STUDY BY EXPERIENCE

I must first state that nothing else has been changed in my physical and other relations except the giving up of alcohol, and that afterward it became possible to do more and more intensive work outside of my regular calling. From the year 1890, I had not been able to rest well and could not relax except for a very short time. But soon after I stopped using alcohol, my whole physical and mental condition strikingly improved.

I would not mention this if I were the only one who had had such an experience. When I have been among associates who have thrown alcohol overboard and have asked them about it, they have related to me the same experience, and we may safely conclude that it would be the same with everyone after he had completely freed himself from

alcohol and had conquered the longing which makes itself felt at the beginning of abstinence and which is the result of changes which alcohol has produced in the body.

If I now say to you that by reason of my experience nothing can persuade me to drink alcoholic liquors again, as long as I have a will of my own, you can not wonder, after what I have told you, and this will be still more intelligible to you if I detail somewhat my special experiences.

I must first mention that I had no unpleasant sensations or symptoms at the beginning of abstinence, and comparing former feelings with those of abstinence, casual longing for beer or wine immediately disappeared or changed to the opposite.

BEFORE AND AFTER

My experiences were as follows:—

1. Whereas formerly when out making calls I became more quickly tired than now, and upon returning home at evening much fatigued, was unable to do a large piece of mental work and often became sleepy at once, now, notwithstanding much physical fatigue—I walk from ten to twenty and more kilometers (eight to fifteen miles), every day—I can work several hours, if necessary, at mental work.

2. Whereas formerly I often awoke in the morning more weary than when I went to bed, I now have refreshing sleep and rise in the morning thoroughly rested.

3. Whereas formerly I was constantly peevish and easily thrown "off the hinges" by trifles, now I have become calmer.

4. Whereas formerly I became fearful and anxious in the face of professional difficulties, now I am calm in every situation.

5. Whereas formerly, and particularly if I had taken no alcoholic drink during the day, I experienced at evening a certain unrest that almost drew me to the tavern, now it always requires some resignation to have to go out on account of society.

6. Whereas formerly I measured 1.1 meters around the waist, I now measure not quite 1 meter.

7. Whereas formerly I could count from four to fifteen intermissions of the pulse in a minute, today I have to wait a long time to find one intermittent beat.

8. Whereas formerly I became almost breathless in mountain climbing, now the steepest climb gives me no more difficulty than did then an easy Alpine path.

9. Whereas formerly I was fond of acids and pungent food, today the use of spices in my kitchen is greatly reduced, mustard and vinegar are almost banished, and sweetmeats and fruits have become my delicacies.

10. Whereas formerly I experienced much thirst and often had the feeling, particularly about four o'clock in the afternoon, as if I should faint—as a rule I took no alcoholic drinks before four o'clock in the afternoon—I am now seldom very thirsty, at least I never feel the need of great amounts of liquid, not even in summer when my calling keeps me for long hours out upon dusty country roads.

11. Whereas formerly, on going to bed after company in the evening, although I always drank moderately I always had a fear lest I should be called out on a difficult case and not find myself quite clear, today it is different, the most difficult case finds me now at any time, mentally fresh and normal and physically strong. It is this that makes abstinence a moral duty for the physician, because only by living abstinent can he be certain at all times to be equal to acting in the best manner possible if he is called suddenly to a severe case.

I think that the enumeration of these points, taken especially from the realm of the sensations, will suffice to show what a great revolution abstinence has made in my whole life. It made this great difference in spite of the fact that I was a very moderate drinker, using seldom more than four glasses of beer or three glasses of wine a day, seldom

drinking at home, and at meal time only when I had guests.

THE UNSUSPECTED FACTOR IN SICKNESS AND DEATH

So you see, gentlemen, when a man stands like the Pharisee and says, "Why does the drunkard drink so much? I drink only what I can carry, and it does me no harm," he is guilty of a presumption that may be severely punished.

Although on looking closely we may fail to find physical suffering here and there, or indeed in many cases, yet we do find many cases of sudden death, many cases of sickness with a speedily fatal termination, in which the cause of death is not explainable until we take into consideration the previous use of alcohol, even though moderate. And since with moderate people the last glass or the last bottle is never recognized as the final straw, no one, as a rule, thinks of alcohol as a cause of the disease, or the death, because the deceased was no "drunkard."

That in such cases alcohol is, nevertheless, not without influence, but figures certainly as one of the causes, we have, I think, taken into consideration more than one proof. If only a greater hardening of the bloodvessels results from the effects of alcohol, with a consequent difficulty in breathing and attacks of suffocation, which otherwise would not take place, or only in a smaller degree, then the moderate drinker is severely punished for his error in looking upon a dangerous insidious poison as an indispensable relish. The recollection of the "pleasure" which caused his condition can not remove or make more endurable months or even years of his life a hell upon earth, so that the unsuspected, premature death of the hard drinker from an acute disease seems like a recompense. There are unnumbered troubles of old age for which the moderate use of alcohol in youth prepared the way, or helped to increase.

ABILITY TO ENJOY INCREASED BY ABSTINENCE

On the other hand, I can prove that by giving up alcoholic drinks one loses nothing, but gains instead, that the enjoyment of every pleasure in life remains untroubled and undisturbed in remembrance, and many hours of ill humor are banished. It is not true that the power of enjoyment for any pleasure is to be procured only through alcohol.

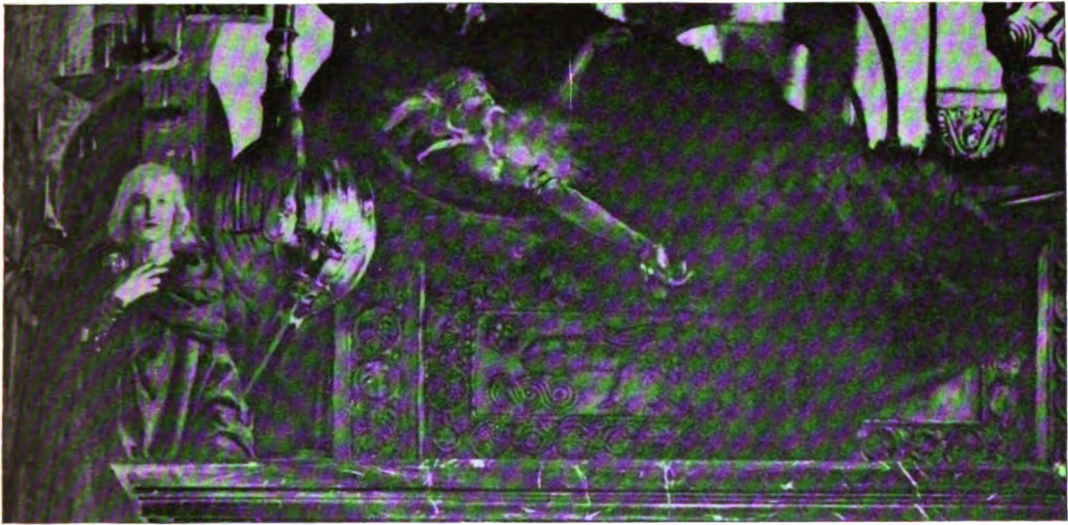
A life without alcohol is not only more beautiful and richer in pleasure, but is much more successful in every direction. I fully concur with Prof. Kassowitz who says, at the close of his article on "How I became Abstinent": "The mental and moral satisfaction

associated with this physical comfort results from the complete harmony between scientific conviction and practical conduct and the growing consciousness of serving a great and good cause. As long as I was not abstinent, although I had an active, scientific interest in the effects of alcohol, I was a stranger to the great question itself. Only since I became an abstainer have I really understood it, and the more I know of it the clearer becomes my conviction that I owe it to myself and my fellowmen to abstain and to make public avowal of my abstinence."

If we trace the logical consequence from

these experiences of daily life and scientific knowledge of the nature and disastrous effects of alcohol, we can come to no other conclusion than this:

Alcohol is an insidious and dangerous poison; it can not, as was formerly believed, take the place of food. No kind of relish should contain alcohol. Abstinence is the only correct and normal attitude toward such a poison; to recommend this course to both the sick and the well is the duty of every physician who thinks and treats scientifically.—Translated for the SCHOOL PHYSIOLOGY JOURNAL.



A QUESTS OF MODERN KNIGHTS

BY WILLIAM T. ELLIS

THIS is the day of the apotheosis of manhood. All considerations stand aside for the coming man. It is in order that the man may emerge that innumerable reforms are being pressed to victory. This new conception of the worth and place of manhood is the real secret of many of the reform laws that have lately gone on to the statute books of governments.

A LOST OPPORTUNITY

It has become the settled conviction of the world's leaders that strong drink is one of the greatest obstacles to the progress of manhood. The social efficiency and industrial efficiency, and political efficiency of the man is hindered by the unrestrained use of and traffic in strong drink. Dr. Samuel G. Smith, in his book, "The Industrial Conflict," points out that during the seventies,

"in England in three years of plenty, wages were increased annually \$200,000,000. That made \$600,000,000 for three years. Did the workingmen, by common impulse, fired by great ambition, save these \$200,000,000 a year? Did they change the savings into gold? Did they control the banks and dictate terms to financiers? For \$600,000,000 was just the amount of gold in circulation in Great Britain at that time.

"If these things had been done, the past thirty years would have seen a new England, and the whole world would have been filled with the sense of the great achievements that had at last been wrought by the working classes. They would have superannuated the aristocracy; they would have swept out age-worn superstitions; they would have come into their own empire. The working people of England earned \$200,000,000 extra per annum, and the sad companion fact is, that the drink bill of England, too, during each of those three years increased \$200,000,000."

Had there been a tangible monster in the form of a physical dragon that had thus devoured the increase of men's substance and prevented their progress and growth, how quickly would all the knightliness of the age have rallied to its extinction. Our imaginations are growing keener nowadays, and we are learning that strong drink is no less dangerous and worthy of extinction because it is a widely distributed evil rather than a personified monster.

THE APPEAL OF EFFICIENT MANHOOD

Not viciousness, but thoughtlessness and uncontrolled self-indulgence are responsible for most use of strong drink. Whenever a person sits down to consider the highest possible use of his own powers, he is inevitably bound to eliminate from his habits the use of liquor. He finds the best scientists in agreement upon the proposition that strong drink impairs a man's highest faculties. The twentieth century is not satisfied to tolerate anything that hinders the fullest development of manhood. In order that he may make more of himself and of his children,

and of his children's children, a man must repudiate whatever hurts or hinders his own capacity. Nobody will deny the statement that man is not man at his best when he is in the grip of the habit of strong drink. Enormous sums are now being spent by the vested liquor interests to stem the tide of temperance reform. Apparently it is too late. The liquor business as a business is rapidly being outlawed all over this western world, and those who engage in it are being socially tabooed. The whirlwind is now being reaped.

EDUCATION THE DECISIVE METHOD

It is not to be supposed that the decisive battlefield in the present temperance conflict is in the halls of legislation. It really lies in the public schools and in the Sunday Schools and in the homes. There must be a mind of temperance and self-control put into the youth of today. Boys must learn the needlessness and hurt of strong drink, and the necessity for withstanding its lure, and the glory of joining that company of knightly souls who have vowed to fight it ever and everywhere until it shall no longer curse the race.—*Boston Herald*.

PARENTAL RESPONSIBILITY FOR CHILDREN'S WELL-BEING

BY FRANZ SCHONENBERGER, M. D., BREMEN, GERMANY

WHEN our little ones come running into the house, crying from a blow on the head, a slap in the face, a bruised knee, or a bleeding nose, the whole house is excited, everybody comes running, and the first questions they ask are "What is the matter?", "Who did it?"

But the same persons look on cold and indifferent while institutions are being filled with children who are dullards, epileptic, or idiotic. No one asks, "Who is to blame for these thousands of children whose golden springtime of life is overshadowed by St. Vitus' dance and epilepsy?" And yet the answer to the question is so plain. Ask the physicians who have investigated the causes of these diseases and they will say to you, "You yourself are the cause. To you is due the greater part of this misery. More than half of all feeble-mindedness and dullness in children is due to the tipping of their parents. More than half of the unfortunate little ones who have St. Vitus' dance and epilepsy are indebted for it to the ignorance of their parents."

THE FATHER'S INFLUENCE IN PHYSIQUE

It was not the "sudden fright" nor the "unexpected blow," not "the black cat that ran

across the way", nor "the red dog that barked at the mother" that was the cause, but the father who undermined his health with "strengthening" wine, beer, and whiskey, and bequeathed to his children a more or less deranged nervous system. It takes healthy parents to beget healthy children. The unwitting multitude calls drinkers only those who fall in the gutter or whose reeling steps challenge the jeers of children. The healthy man, descended from healthy parents, "carries" large quantities of beer and wine, and you do not observe any signs of injury because there are no serious outwardly apparent disorders. It is like looking upon the outside of a stately tree and being unable to see the worm gnawing at its heart. But when a sudden tempest has broken down the tree, then the most shortsighted can see that the resistance of the tree, to outward appearance so sound, had been weakened.

But if the man apparently so healthy, is carried off by a rapidly terminating disease, like pneumonia, the multitude will not believe in the weakened resistance although it has been clearly demonstrated by experience and science.

But the children of the healthy appearing drinkers show slight nervous disorders that

even the laity can perceive. They are also easily disposed to sickness, and they show, particularly, a tendency to drink. It has been statistically proved that 75 per cent. of drinkers are descendants of drinkers. The descendants of these drinkers, whose daily quantity may be entirely moderate, are these unfortunates who may suffer epilepsy, St. Vitus' dance, and idiocy, for the sins of their father.

PROPER NUTRITION INTERFERED WITH BY DRINK

The use of wine and beer by the parents not only causes the children to be diseased and defective, but it robs them also of their natural nourishment. Professor von Bunge has shown by most exact investigations that the use of alcohol is the cause of an increasing disability of women to nurse their children.

PERILS OF DRINK USED BY THE CHILD HIMSELF

When the mischief has been done, when the father, or the mother, is found to be guilty in this respect, what can be done? First of all, beer and wine must be kept out of the nursery. Alcohol is a worse poison for the child than for the body that has attained its growth.

Science has shown that alcohol destroys first the parts that are most delicate and that have taken longest to develop. These are the wonderfully delicate brain cells, upon whose complete development depends the difference between man and the animals. These finest structures are only partially developed in the child. The child lacks, therefore, words, judgment, intelligence, insight, all the moral sensibilities which control our thinking, feeling, and willing. How the drunkard by paralyz-



This mark of degeneracy is hereditary. If a woman is unable to nurse her children, it nearly always follows that her daughters are likewise incapacitated and the loss continues through succeeding generations.

A marked cause of this degeneracy is the drinking habit of the father. Professor von Bunge found that the daughters of drunkards were usually unable to nurse their children. What a source of danger to life this is, is shown by the fact that the death-rate of bottle-fed babies is six times as great as that of breast-fed.*

ing his brain cells can sink lower than the animal is well known. Whoever, therefore, gives a child wine and beer, impairs these delicate tissues in their development, and anger, thoughtlessness, desultoriness, gross sensuality, and all immoral qualities may gain control. Nothing holds such a man back from debauchery and crime. When the prison doors close upon him it is then too late for tears of repentance, for remorse because you did not warn your son in time against this poison that annually brings 150,000 Germans behind locks and bars.

But preaching and warning against the beer glass avail only when fortified by personal example. In Sparta slaves were made drunk in order that their detestable condition might serve as a warning example to the boys ;

*It will be understood, of course, that one reason for this larger percentage of mortality is the fact that less careful attention is likely to be given to healthful conditions in artificial feeding in these homes.—Ed.

but today the boy's own father often plays this sorrowful role.

THE GUARDIANSHIP OF CHILDHOOD'S WELFARE

Have mercy, parents, upon your children. Warn them away from this disastrous poison. All the empty talk about the nourishing, strengthening effects of alcohol were long ago proved by science to be false and absurd. Give these nervous, prematurely old little ones their natural means of development by the total banishment of alcohol, by providing them with rational food, and a hygienic, well-regulated, hardy manner of life. Whoever has to do with the training of youth should hold it his sacred duty to set them a good example. The physician, the clergyman, the teacher, the head of the family, the father, have this part to fulfil. But when they lack the judgment, the strength, or the courage, then, mothers, it is for you, if you love your children to fortify yourselves. You must keep wine and beer out of their reach. Be to your sons and daughters a shining example. Show them that you know what you owe to your children.—Translated for the SCHOOL PHYSIOLOGY JOURNAL.

WHY A PLEDGED ABSTAINER

BY PRESIDENT HENRY CHURCHILL KING,
OBERLIN COLLEGE

WHY be a pledged total abstainer? I begin my answer with what seems best for my own highest good. And here, in the first place, the dangers seem to me so real and great, the benefits so meagre and doubtful, the bearings of the question so wide and deep, that I count it better definitely to face and decide the question of the use of liquor once for all, and to decide it in the line of abstinence.

Such a pledged attitude, moreover, seems to me to be most *in line with the safe and sane rational life* urged in the following paragraph of James' Psychology:

"The great thing then, in all education, is to make our nervous system our ally instead of our enemy. It is to fund and capitalize our acquisitions, and live at ease upon the interest of the fund. *For this we must make automatic and habitual, as early as possible, as many useful acquisitions as we can,* and guard against growing into ways that are likely to be disadvantageous to use, as we should guard against the plague. The more of the details of our daily life we hand over to the effortless custody of automatism, the

more our higher powers of mind will be set free for their own proper work. There is no more miserable being than the one in whom nothing is habitual but indecision. Full half the time of such a man goes to the deciding or regretting of matters which ought to be so ingrained in him as practically not to exist for his consciousness at all."

I can not think it wise to leave a question so important and so continually recurrent as the use of alcoholic liquor to continual reconsideration. The very attempt at moderation compels one to give far more time and attention to this question than it is worth. A policy of abstinence, on the other hand, is clearly safe, and leaves the man with the higher powers of his mind just so far set free for their proper work. In other words, this is a question that it seems entirely possible to turn over to habitual action, without any serious loss. Where that is possible, psychology seems to me to urge the wisdom of such a policy.

The second reason why a pledged total abstinence seems to me desirable, is because *a pledge-signing movement is the most natural, and perhaps the only way to make definite and decisive the much needed movement for personal temperance.* The mere arousing of sentiment in this direction is not enough. Such sentiment is easily and almost certainly dissipated, unless it is crystallized in some definite resolution or action. The total abstinence pledge gives such a needed expression to the aroused temperance sentiment. One may well face the question for himself, and ask how else such a movement for personal temperance could be made really effective.

Once more, a pledged total abstinence seems to me desirable because it is *the most positive and definite way in which one's influence can be made effective for others.* The man who has pledged himself to total abstinence has thereby put himself on record, as far as he possibly can, in favor of such a policy for all men.—*Youth's Instructor.*

MESSENGERS

By Emily A. Braddock

ALL in the morning drear
I heard a bluebird sing—
And sorrow lifted up her eyes,
And hope, afar, saw sunny skies,
And love looked into Paradise,
And ghostly fears took wing.

Amid the lingering snows
I saw a daffodil—
An old man smiled above his staff,
Bubbled a baby's gleeful laugh,
Joy held her cup and bade me quaff,
And take, athirst, my fill.

—Sunday School Times.

ONE LIVING TRUTH IN THE HEART OF A CHILD

I would rather plant a single acorn that will make an oak of a century and a forest of a thousand years, than sow a thousand morning glories that give joy for a day and are gone tomorrow. For the same reason I would rather plant one living truth in the heart of a child that will multiply through the ages, than scatter a thousand brilliant conceits before a great audience that will flash like sparks for an instant, and like sparks disappear forever.—*Edward Leigh Pell.*

TAKE HEART AND GO ON

BY HENRY R. PATTENGILL, LANSING, MICHIGAN

Ex-State Superintendent Public Instruction and Editor Moderator Topics

FOR more than twenty years I have been visiting all classes of schools in the State of Michigan. For the past ten years, these visits have been about equally divided between urban and rural schools. For five years past, in nearly every section of the state, it has been the writer's privilege to "quiz" the pupils of these schools on their studies, school work, and play. The sanitary condition of school buildings and surroundings has been a matter of especial consideration.

During this entire period our State Board of Health has been actively interested in bettering health conditions, and moulding public sentiment concerning the restriction of diseases; and in doing this great work, has formed an alliance with the schools, and distributed pamphlets to aid in this important part of public education.

A criticism of this school work in temperance and hygiene by two speakers in the 1906 session of Michigan State Teachers' Association in Battle Creek caused the writer of this article to ask himself if he had permitted his feelings to blind his sight to the truth, in coming to a conclusion so different from that of these learned men. Therefore, since that meeting in visits to nearly one hundred schools in five widely separated counties of our state, the writer has taken especial pains by questioning and observation to ascertain the true status of affairs concerning health and temperance teaching.

CHILDREN'S HYGIENIC AND TEMPERANCE KNOWLEDGE TESTED

In more than half of these one hundred schools, the pupils have been "quizzed" on health and temperance topics by questions concerning the care of the eyes and ears, the composition and growth of bone and muscle, the function of the heart, of the lungs, the processes of digestion, circulation, respiration, the necessity of ventilation and cleanliness, the kinds of food, injurious effects of rapid eating, of narcotics, alcoholic drinks, and opiates on the muscles, nerves, tissues, and the will; what to do in cases of fainting, drowning, injury to an artery, etc.; how to

restrict the spread of typhoid, diphtheria, consumption, etc. Pupils were asked to name substances in which the dangerous narcotics and intoxicants are found. Sometimes fifty questions were asked of a school on these subjects. At the same time questions on arithmetic, language, geography, and masterpieces were interspersed.

Pupils had no warning of the impending "quiz" and of course no special preparation for it. The questions were put rapidly, and very little time given for reflection. The responses to these tests were certainly most gratifying. Scarcely a school did not acquit itself as creditably on the health and temperance topics as on any of the other studies. The tests may not have been technical enough to suit the learned critics, but no fair-minded person possessed of common sense and a fair knowledge of physiology, hygiene, and life could fail to rejoice over the results. One especially commendable feature was that in no instance did pupils appear to think that any special attempt was making to preach a sermon or give a temperance lecture to them. They considered the truths of these subjects in as matter of fact a manner as they did any phase of school work.

The writer, one evening in December, 1906, happened to be sitting by the side of a seventh grade rural school boy in a Pennsylvania institute. Before the lecture began he put that lad through the same "quiz" that he had been giving to the Michigan pupils. The result was the same. The boy failed to answer but one out of the fifty questions, and that one of minor importance. Of course we can not judge of the teaching of temperance and health in Pennsylvania by the ability of this lad in answering these questions, but the chance in the selection of the pupil and the result of the examination are to say the least mightily corroborative.

CONCLUSION AS TO THE VALUE OF INSTRUCTION

The investigation among one hundred schools in five widely separated counties of our own state, and the results of the tests impel the writer to draw the following con-

1. That we do not wonder that the liquor interests begin to feel the effects of this teaching on their business. This is evident as (a) The use of intoxicants in America is not increasing in proportion to the growth of our population. (b) Liquor drinking and liquor selling are steadily growing less respectable. (c) Great corporations and firms are requiring total abstinence of their employees. (d) The young man who uses liquors, smokes cigarettes, or frequents saloons, is seriously handicapped in getting or holding a good position.

2. That the Michigan State Board of Health has done, and is doing a most valuable work for our commonwealth by putting into the hands of teachers the plainly composed, carefully prepared pamphlets giving information and suggestive teaching leading to the prevention and restriction of contagious and infectious diseases.

3. That teachers, on the whole, are very sensibly adapting this instruction to the conditions in their schools.

4. That no work of the schools is of greater value than that pertaining to public health. Two years have been added to the average length of human life during the last fifty years by the efforts of boards of health, physicians, scientists and public education.

5. That health and temperance are taught as sensibly and effectively as are any other subjects and are remarkably well taught.

6. That a continuance of this sane and practical work can but be of inestimable value to the state.

UNTENABLE OBJECTIONS TO THE INSTRUCTION

Teaching a child the evil effects of intoxicants and tobacco tends no more to make him desire to acquire the drink and tobacco habits than does the teaching of the nature of smallpox make him desire to try that disease. Those who say that the prohibiting of certain practices is a sure way to stimulate their use, would, on the same theory, abolish the "nots" from the commandments.

A puny argument advanced against teaching the child the pernicious effects of tobacco, is that it would have a tendency to lower his respect for the father who uses the weed. If this were true, which is not the case, the father would do well to reform. But to limit education by a code so narrow and silly, would be to restrict the school curriculum of moral teaching to a very narrow margin. As well might one say: Do not teach truth telling to the children of liars, or clean speech to the child of an obscene or blasphemous parent, or courtesy and kindness to the progeny of the selfish boor.

THE PERSONAL INFLUENCE OF THE TEACHER

This theory, however, should be made emphatic: The teacher teaches as much by example as by precept. We should be what we would have our children be. We should impart health and strength, not disease and weakness. The teacher, above all others, should have the sound mind in a sound body. Many a child has been started on a morose, peevish, unhappy life, by the constant nagging of a peevish, nervous, cranky teacher. Many a lesson of slovenliness, uncleanness, untidiness is taught by the personality of a teacher and her care of the room. Many a child has been started to a helpful, hopeful, wholesome life by the daily influence of a clean, strong, cheery, mannerly, healthy teacher.

Teacher, have a care to the surroundings of your school! Attend to the ventilation. No matter how poorly ventilated your school may be, you can with just a little exercise of sense and gumption, plan to let in fresh air in such a way as not to cause drafts. Give frequent chance for change of position, for relaxation, marching, singing, outdoor play, etc. Attend to the wraps, overshoes, wet feet, and bedraggled clothing, especially of the younger children, and teach the older ones to care for themselves. Don't imagine for a moment that you can do the work you should do in a school without a wholesome amount of sleep for yourself together with good food and regular physical exercise.—*Michigan Public Health.*

DISINFECT THE NEW HOME

STATE Health Commissioner Dixon of Pennsylvania, gives some timely advice to people who are about to move into a new home. He advises that before occupying a house from which another family has moved away, all the rooms should be thoroughly fumigated and disinfected. The Commissioners adds:

"This is the season of the year when on all sides we see people moving from one home to another. The householder decides to change his residence and rents a house from which another family is just moving. Of course, floors are scrubbed, cellars are cleared of the rubbish left by the tenant, back yards are cleaned up, and we take it for granted that the housekeeper of the incoming family works to make the new home at the very beginning clean and neat.

"The cleaning that I have mentioned, however, is not sufficient. Soap and water are splendid things, but unfortunately they will

not kill germs of disease that may lurk in the new home and bring the hearse to the door soon after the moving van has driven away.

"How do you know that there has not been a consumptive living in the house into which you are moving? The afflicted one may have been in a mild stage of the disease, but nevertheless he may have left behind the germs that will result in bringing down one of your family with this disease, which every year carries off so many thousands of people in Pennsylvania.

"I am convinced that hundreds and hundreds of cases of tuberculosis and other infectious and contagious diseases could be avoided every day by the precaution of proper disinfection. We are all anxious to do everything possible for the health of our children, but too often we fail to take some simple precaution, and disease stalks in through the bars that we have left down."—*Iowa Health Bulletin*.

SMOKERS FAIL IN STUDIES

IT has long been known that as a rule smoking boys do not make good students. Confirmatory evidence is found in results of recent investigations in Grand Rapids, Michigan, where the principal of the high school, Jesse B. Davis, and his teachers have been making a systematic canvas of the boys, the results of which were reported in the *Moderator Topics* (Jan. 1909).

Last year's entering class contained more than 100 boys of whom 11 were classified as habitual smokers. In drawing the line between the habitual smoker and the occasional one, it was decided to class as habitual, the boy who bought tobacco and carried it on the person. All had begun smoking previously to entering the high school, some of them having begun as early as ten years of age.

Each boy had four studies, making a total of 44 studies for the 11 students. At the end of the first semester, the records showed failures in 31 out of the 44 subjects; only 13 had been passed.

At the end of the second semester, there were failures in 37 out of the 44 studies, and it must be remembered 31 out of these 37 subjects were being studied for the second time.

In the subjects passed, the averages of these boys were, with one exception, only 75 per cent., one only attaining 80 per cent.

At the end of the year, six of the boys left school for good, and of the five who are left but two show signs of being able to shake off the habit of smoking.

Systematic attempts were made to cause the boys to break away from the smoking habit until they had attained their majority. Teachers talked with the parents and in every way possible tried to get the boys to break away. Only two of them have shown any inclination to do so.

THE EFFECT OF FIVE GLASSES OF BEER A DAY

BY DR. CONRAD WEYMANN, OF BERLIN*

LET us consider the case of the moderate habitual drinker who takes his five glasses of beer a day.

At first it may seem that no effect of continued moderate amounts upon mental activity could be shown. But exact investigation shows, even in such cases, a considerable injury. Memory and judgment in general are not impaired, but wit, energy and productivity of the mind have suffered irreparable injury. It would not be difficult for you to find such people all about you in your immediate neighborhoods; they attend well to their regular business, in general things they manage and judge correctly, in the evening they run on easily with the same jokes and the same kind of talk. Their poverty in new, original thought increases from year to year. In speech, in reading, in writing, promptness of thought is gone as soon as the subject is one foreign to their accustomed profession or train of ideas; hand in hand with this goes a gradual deadening of the sensibilities.

As a rule, these people do their duty. I will not even deny the agreeable side of their temperament, but this good-nature cannot reconcile us to the continual disappearance of higher interests. The horizon of their feelings contracts, the taste for art, for science, for the beauties of nature and truth steadily declines. Life becomes centered about his calling, his family and the beer table.—Translated for the SCHOOL PHYSIOLOGY JOURNAL.

*"Arbeiterversicherung und Alkohollismus" (Workmen's Insurance and Alcoholism).

THE COCAINE MENACE

THE COCAINE fiend is at large in the Philadelphia schools. At least a fifteen-year-old lad has confessed to being in the business of selling the drug to pupils at recess. Eternal vigilance is the price of virtue. Philadelphia has wiped out the diabolical business promptly. Let all cities be on guard.—*Journal of Education*.

School Physiology Journal

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.\$0.50 each
Clubs of 50 and over..... .40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered at the Boston Post Office as Second Class matter

There are no shadows where there is no sun;
There is no beauty where there is no shade;
And all things in two lines of glory run,
Darkness and light, ebon and gold inlaid.
—F. W. Faber.

GOOD FELLOWSHIP

AN honored clergyman in an eastern city who is noted for his gracious courtesies, recently put this question to a group of gentlemen who were discussing the alcohol question:

"What ought I to say when, at a wedding at which I have performed the ceremony, I am asked to drink to the health of the bride?" Various replies were given, the tenor of several of them being, "No, I thank you, not today." After hearing them, the clergyman said, "Gentlemen, I'll tell you what I do say: 'No, I thank you. I never use it.'"

A veteran of the Civil War who enlisted at eighteen has often said that he believed that he escaped drinking and other harmful habits acquired by many young men in those days, simply because, like the clergyman, he quietly but courteously asserted his fixed principle in the matters, and the words, "I never use them", left no opening for an appeal to an occasional indulgence.

An acquaintance of a group of young physicians picked from among their fellows as choice and able men, lamented the habit not uncommon with many of them of using alcoholic beverages to a greater or less extent. "Why do they do it", was asked, "if they know the risk they run of spoiling their professional careers?" "Oh, they think they must because the others do, to show good fellowship, etc." was the reply.

The idea that that way lies good fellowship and sociability is as old as the drink itself, but before the modern array of facts pointing to the danger in even moderate use of alcoholic drinks, a final excuse for indulgence is often found in this plea of fellowship.

Based upon the lower rather than the higher ideals of comradeship and friendliness, it should be forestalled in boyhood by parent and teacher. A knowledge of the facts about alcoholic drinks as a foundation, an appeal to pride in manliness, in efficiency, in the holding of high ideals, an arousing of the sense of social responsibility in young manhood and young womanhood, training in resourcefulness in entertainment, will go far to dislodge one of the most potent as well as one of the most subtle of the temptations to drink.

On the sole ground of courtesy even, a host may have less reason for taking offense with a guest who declines his wine because he "never takes it", than with the one who declines it "today", and thus seemingly discriminates against his host's intended courtesy.

The early fixing of a principle of action in this matter closes many a door to argument and, as President King's words elsewhere in this number show, eliminates from mental and moral life the wear and tear of considering whether one may or may not on occasion indulge in the use of these beverages. Viewed from this standpoint, true "personal liberty" seems to be the portion of the man who frees himself once for all from the perplexities of "to drink or not to drink", rather than with the one who occasionally drinks "moderately" because he likes it, and who must be constantly reopening and resettling the question each time that the invitation or temptation comes to him.

WHY DOESN'T HE CONTROL HIMSELF

THE observer of the ease with which the drink habit is frequently acquired to the ruin of the victim often considers it a sign of moral weakness and says with impatience "If he would only use his self-control!"

As well ask of a man with a broken leg, "Why doesn't he walk." The reason for yielding to the continued harmful use of drink is not to be found primarily in lack of morality or of purpose, but in the direct effect of alcohol on the brain cells, and in the unhealthful physical conditions which it creates and which affect brain action.

Modern study of the mind and its operations has shown clearly that one of the first results of the use of alcoholic drinks is to paralyze or dull the centres in the brain which exercise restraint, while the factors entering into will such as memory, deliberation, attention, judgment and reason are impaired. "Self-control" says Dr. George B.

Cutten, "means deliberation and checking of impulsive action in order to deliberate... It seems to be the special attribute of alcohol to exalt the mechanical activity of the mind [impulses to action] and at the same time the power of control through the will is diminished.... The alcoholic is devoid of the power to act at the proper time and in the right way, no matter how much he may admit such action to be correct; on the other hand he is equally powerless to check incorrect action which is in line with his alcoholic craving. He has the delusion of free will and thinks he can stop drinking if he wishes, but on account of a lack of nervous energy he has not the ability for sustained effort."

It is not to be understood, of course, that reform of the person addicted to alcoholism is impossible, although the chances are greatly against it. But the old fallacy which men have hugged to themselves through many a generation, "I can drink or I can let it alone," will cease to deceive when it is understood that alcohol directly impairs the very powers on which one must depend "to let it alone."

The man who seems to be able to restrain himself beyond the taking of a glass or two should not flatter himself upon his superior moral ability, but should be humbly grateful that he is apparently physically better able to withstand the worst influences of alcohol upon his brain, though he can never be sure that he is escaping any evil consequences.

The matter of moral responsibility rests with such a man since his example may lead into the habit of using alcoholic beverages those who can not "stop with a little" and become physical and moral wrecks.

TRUSTWORTHY STATISTICS

THE Brewer's Year Book for 1909, just received, says quite correctly: "The Swiss mortality statistics are supposed to be particularly trustworthy. According to official returns for Switzerland, alcoholism was found to be a direct or contributory cause during the period 1891-1899 in 10.7 of each 100 deaths among males, and 1.9 in each 100 deaths among females. During the period 1900-1903, 10.3 in 100 deaths among males and 1.9 in each 100 deaths among females were ascribed to the same cause.

Note particularly that the basis of the rate here in *one hundred deaths*.

In the same paragraph just preceding this is given the rate *per one hundred thousand of the population* in other countries of

Europe, with no italics or note to mark the sudden transition.

The striking difference between Switzerland's alcoholic death rate and that reported by other government statistics would stand out altogether too prominently for the brewer's purpose if they were placed side by side on the same basis. Reducing the Swiss death-rate to the basis of 100,000 *population*, (using official Swiss statistics for 1906)* the death-rate from alcoholism appears to be 103.5 per 100,000. Placing this in a column with the rates of the other countries we have:

Death rate from alcoholism per 100,000 of population:

United States	6.2
Prussia	7.9
Bavaria	7.4
Baden	2.4
Italy	1.7
England	19.2
Scotland	10.1
Switzerland	103.5

The trustworthiness of the Swiss statistics is due to the fact that the official blanks sent to physicians to fill out in reporting deaths call for a statement of contributory as well as immediate causes. The blanks of our own and other countries are deficient in this respect. As the statistician of the United States Census Bureau says of the death rate from alcoholism:

"It is not at all likely that there should be very definite returns of death due to this cause, especially those due to the indirect effects of alcohol. Many chronic degenerative diseases, such as cirrhosis of the liver, must be considered in estimating the total effects of alcoholism, and as the certificates of death from secondary effects of alcohol frequently make no reference to alcoholism as a primary cause, it is impossible to make a complete statement in this respect."

Question: If Switzerland's 103.5 deaths from alcoholism in every 100,000 of the population furnish a true report of the effects of alcohol in a wine-drinking country, how could the United States reduce her alcoholism by promoting the use of beer and wine, as the producers of those beverages would have us believe?

Specially advantageous club offers for new subscriptions or renewals, good for a limited time only, will be found on the cover of this number of the JOURNAL.

*The Swiss statistical year-book for 1907 gives the total number of deaths in the country for 1906 as 59,204; the total population for the same year is estimated at 3,491,163.

Brain and Nerves as Masters of Efficiency

The object of education in general is to produce in the boy or girl, and so in the man or woman, three results: First, a sound, useful and useable body; second, a flexible, well-equipped and well-organized mind, alert to gain interest and assistance from nature and co-operation with other minds; and third, a wise and true and valiant spirit, able to gather to itself the higher things that best make life worth while. The use and growth of these three things, body, mind and spirit, must all be found in any effective system of education.—Hon. Gifford Pinchot.

Perhaps the strongest appeal for healthful living which can be made to young people comes through a study of the wonderful structure and operations of the brain and nervous system.

The reasonableness of care of these physical gifts, their part in education, their importance to efficiency and success, became fascinatingly clear in a study of the structure and operations of nerve cells. Helpful reference material on this point will be found in Hough and Sedgwick's "Human Mechanism"; Gulick's "Control of Body and Mind," and Hewes' "High School Physiology." The following selections are chosen to illustrate essential features in the healthful use and development of the nervous system and to indicate the practical application of some of the injuries worked by unhygienic habits.

RATIONAL CARE OF THE NERVOUS SYSTEM

The cardinal principle in the care of the nervous system is thus the same as that in the care of the steam engine. Do not often call upon it for activity of any kind when conditions of undue fatigue are likely to be present. Go to the performance of every physiological activity, to digestion, to study, to muscular work, to social life,—*for all these mean nervous activity*,—as far as may be with a rested nervous system.

There are times in every one's life when some unusual strain must be borne; when, for example, after the day's work watch must be kept at a sick bed during the greater part of the night. Too often people will undertake this strain, expecting to "make up" the loss of rest when it is over, or when it is possible to prepare for it by an hour or so of sleep beforehand. We seldom work steam engines in this way. Should we treat the nervous system less carefully than a steam engine?¹

THE VALUE OF PLANNING OF WORK AND OF CONCENTRATION

It is very important to understand clearly that it is *misdirected* nervous activity, and not mental work in itself, or the concentration of attention which mental work requires, that leads to bad results. It is a part of our normal life to do mental work and to cultivate the power of close application to that work; it is a part of education to develop the power of concentration and attention against resistance and inclination, and experience shows that this may be entirely consistent with the maintenance of health. But when a student "crams" for an examination for two or three days, with the minimum of sleep during the period, and breaks down after it is over, it is not merely mental work that should be

blamed for the result; for he would probably have broken down if he had attempted to work a typewriter during the same time, with no more relaxation or rest. The real cause of the trouble is *too long continued use of the nervous system*.¹

THE PHYSICAL LAW OF SUCCESS

Scientists tell us that practically all the nerve cells—the neurons—that a human being is ever to have, are lodged within him when he is born. No amount of wishing or striving or eating or sleeping will ever give any human being more neurons than he has in the beginning.

What then can we do to increase our wisdom and skill? The answer comes back without a moment's hesitation: Increase your dendrites and connect the neurons.

Further questions bring out further answers and we end by knowing the following surprising facts.

1. The difference between the power of one brain and another may be nothing more than a difference in the way the neurons are connected with each other.

2. Brain messages run, constantly back and forth between different parts of the brain to keep our thoughts from getting disconnected and to keep the messages to our muscles from being confused.

3. These messages must travel from cell to cell, along paths that lie in the dendrites and the axons.

4. To increase intelligence or dexterity in any given direction, increase the number of paths that connect the neurons which you must use. Brain paths, then, are our only hope—paths within those dendrites and those axons which clasp hands with each other and bind the neurons together. Our task is clear and simple. We must make as many connections as possible between any set of neurons that govern the special line of thinking or working in which we wish to excel.

But how can we hope to change the number or the power of those slim, twisted fibers that control our destiny? The answer to this question opens a door of hope to each of us.

Persistent practice in any direction develops paths between the neurons which control that particular line of thought or exercise. It is

indeed supposed that this practice increases the number of the dendrites themselves.

When you see a boy who is awkward in running and jumping, and a girl who is clumsy in sewing or cooking, or playing the piano, you have a right to say, "Evidently they are doing the best they can at the present moment, but they have not practiced enough in the past to develop the dendrites that will help them now."

Clearly there is no such thing as luck in this law of the dendrites. And, quite as clearly, just because luck is cut out, the road to success is open to each one of us. When we are trying to learn anything, let our watchword be, "May my dendrites grow; may my brain paths increase." Any boy who follows this inspiration may turn himself into the man he wishes to be. Any girl may become her own model. Neither dares to trust to luck for both know that, from the time the first stimulus went across the first amoeba until now, no accident has ever built up a fine set of brain paths.²

THE WISE ORDERING OF LIFE AND GOOD HEALTH

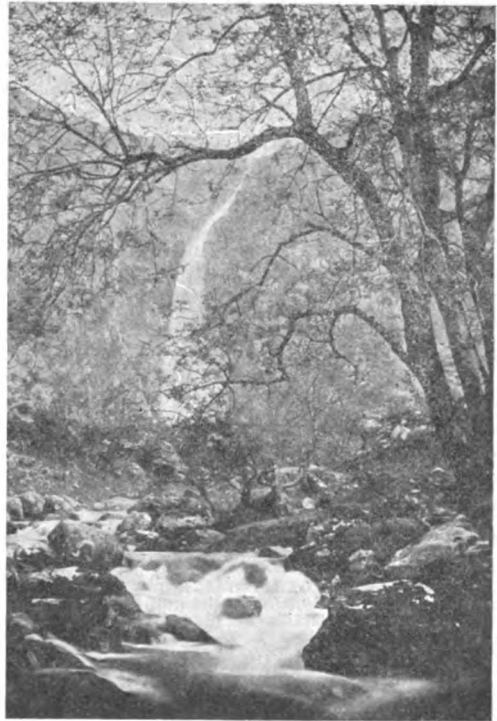
It is a matter of common experience that emotions, feelings, moods, etc., profoundly influence human conduct, and so indirectly affect health, especially the health of the nervous system.

The bestowal of a healthy attention upon the moral aspects of conduct is a legitimate and essential part of personal hygiene, and it is not too much to say that much of the ill health from which men and women suffer is to be traced primarily to the absence of sound moral sense or to its abnormal or perverted development. Care and worry often cause weariness and loss of sleep which even diversion and muscular exercise cannot overcome. They seldom trouble the young, but as age advances they are sometimes inevitable. Efforts should be made to avoid them, as far as possible, by a wise ordering of life, by forethought, thrift, economy, sobriety, honesty, and the like, which tend to "a light heart" and "a clear conscience". A heavy heart and a clouded conscience tend to unhappiness, anxiety, wakefulness, and other physical ills.¹

THE IMPORTANCE OF NATURAL SLEEP TO EFFICIENCY

It is of high importance in hygiene to train yourself in sleeping, i. e., to get the habit of being able to sleep at any time and not be tied down to definite hours and places. By mollycoddling we make sleep harder. A per-

son can accomplish more if he is able to go to sleep at any time, on any bed, in any third-class railroad carriage, on any chair, so long as he only has the time. The best way to ruin sleep is to misuse the evening for the hardest mental work and strain to keep awake or artificially force yourself to it with large doses of tea or coffee. Forced brain action of this sort is unhealthful to the highest degree. But it is worse still to get the sleep back again afterwards by narcotics. Sleep induced in that way is really a kind of torpor brought on by poison and gradually drives away natural sleep, because the brain is chronically poisoned and at the same time trained to depend on artificial aids to sleep.³



ONE REASON WHY ALCOHOL INTERFERES WITH EFFICIENCY

Running out from the normal nerve cell are a series of long processes on which are arranged numerous delicate lateral twigs. These long processes taper off slowly and regularly for a short distance from the base of the cell after which they are prolonged as threads of fairly constant size throughout the remainder of their length. In this condition [alcoholism] in which the body of the cell is altered, it may be atrophied and fatty, but in some cases where no very marked alterations can be demonstrated in the cell itself these long pro-

cesses are seen to undergo remarkable changes. Little swellings make their appearance at regular intervals, first near the tip of a process, and gradually work back towards the body of the cell, so that after a time the process looks almost like a string of beads. Alongside these changes, some of the lateral twigs have become swollen and shortened, whilst others disappear; in advanced stages the bulk of them so disappearing. Let us see what all this means. The nerve cell may be compared to a small electric battery, the long processes leading from it to wires, and the small twigs to little associating wires, corresponding to the induction coils bringing the various processes in association with one another and passing on the current from cell to cell in different directions. Whenever we have irregular thickening and shortening of the long fibres, and disappearance or stunting of the small lateral twigs, certain of the "communications" between cell and cell are done away with. So many of the connecting wires are cut out, as it were, and the interference with the passage of nerve impulses along the nerves is so marked that commencing with the more delicate processes of thought and going on to the machinery by which "we live and move and have our being," the nervous mechanism is gradually thrown out of gear.—PROF. G. SIMS WOODHEAD, Cambridge University.⁴

THE POWER OF JUDGMENT

The powers of conception and judgment are from the beginning distinctly affected although he who takes the alcohol is quite unconscious that it has this effect. The actual facts are exactly opposite to the popular belief. PROF. E. KRAEPELIN.⁵

Query.—How would this fact apply to such sports as baseball, tennis, football, golf, disc-throwing, etc.? Emphasize the large place that correct conception of things and facts and correct judgment occupy in efficiency.

When the higher powers of the mind, *i. e.*, those involving association of ideas and the formation of judgments, were called into play, Kraepelin found that there was no real quickening of brain activity under alcohol, but that its slowing effect upon the brain began from the first and continued throughout.⁵

A consulting physician said recently "I should not dare take a glass of sherry before going to a consultation." Why? See also article, page 130.

PRACTICAL ASPECTS OF INFLUENCE OF DRINK ON MEMORY

Persons were set to memorize numbers which were written in columns, and required to be repeated again and again until they could be repeated correctly once. It was found that without alcohol 100 figures could be remembered correctly after 40 repetitions, while under the influence of alcohol only 60 figures

could be remembered even after 60 repetitions.

Problem.—Estimate mathematically how much working capacity would be diminished and daily and yearly earning ability decreased on the above basis.

The untruthfulness and inexactness of those who take alcohol is frequently due not so much to a wilful determination to lie, as to a vague inability to recall accurately events, facts and promises, for the very reason that alcohol has prevented the cells, upon the activity of which memory depends, from recording normally vivid and exact impressions.⁵

MENTAL RESPONSIVENESS

Kraepelin found that the simple reaction period, by which is meant the time occupied in making a mere response to a signal, as, for instance, to the sudden appearance of a flag, was, after the ingestion of a small quantity of alcohol (one-fourth to one-half an ounce), slightly accelerated, that there was, in fact, a slight shortening of the time, as though the brain were enabled to operate more quickly than before. But he found that after a few minutes, in most cases, a slowing of mental action began, becoming more and more marked, and enduring as long as the alcohol was in active operation in the body, four or five hours.⁵

Apply practically to railroad service, telegraphy, rescuing persons in danger, recognizing and seizing favorable business opportunities.

FALSE SOCIABILITY

Incipient intoxication, the feeling of being jolly, shows itself in a failure to form involved and abstract relation of ideas.—HERBERT SPENCER.⁵

I have recognized the fact that alcoholic drinks have a tendency to make people jolly and noisy; but the question of the expediency of that kind of elevation has gained on me as the years have gone on. It seems to me that the recent researches in physiology and medicine tend very strongly to show that the moderate drinking of alcohol is inexpedient. PRES. CHARLES W. ELIOT, Harvard University.

Subjects for discussion by the class.—In what does genuine good fellowship consist? Are alcoholic drinks necessary for "a good time?" Different plans for enjoyment. See page 138.

REFERENCES

- (1) Sedgwick and Hough—The Human Mechanism.
- (2) Gulick—Control of Body and Mind.
- (3) Forel—Nervous and Mental Hygiene.
- (4) Kelyack—The Drink Problem.
- (5) Horsley and Sturge—Alcohol and the Human Body.
- Sahler—Psychic Life and Laws, Chapters IV and V.
- Rossiter—Living Temple, Chapters XIV-XVIII.
- James—Psychology, Vol. I, "Habit".
- Call—Power Through Repose.
- Call—As a Matter of Course.
- Jordan, W. G.—Majesty of Calmness.

No one is useless in this world who lightens the burden of it to anyone else.—Dickens.

PROGRAM OF THE TWELFTH INTERNATIONAL CONGRESS
AGAINST ALCOHOLISM

THE Twelfth Biennial International Congress Against Alcoholism will be held this year in London, July 18-24, at Kensington. Sectional meetings will take place in the Imperial Institute, and the interesting exhibit of literature and methods of temperance work will be installed in the North Gallery of the Institute.

The Honorary President of the Congress is the Duke of Connaught, and there is a long list of honorary vice-presidents including the leading bishops and archbishops of England, the Earl of Aberdeen, Lord Carlisle, Lord Curzon, Admiral Beresford, Lady Henry Somerset, Hon. John Burns, and many others representing the scientific, political, and religious world.

Anyone may be enrolled as a member of the Congress, even if unable to attend the same, by the payment of \$1.25, which will entitle him to receive the report of the papers and proceedings of the congress. Address the Secretary, 34 Paternoster Row, London, E. C.

The provisional program, after the opening of the Congress on July 19, is as follows:

Tuesday, July 20.

Abstinence in Youth and National Life—Miss Cora Frances Stoddard, Boston, Mass., U. S. A. (Editor of SCHOOL PHYSIOLOGY JOURNAL.) Temperance Education in the Different Countries—M. J. Gonser, Berlin. Temperance Work in the Juvenile Societies of the World—Mrs. Alli Trygg-Helenius, Helsingfors. Temperance Teaching in the Higher Schools—Miss A. W. Richardson, London, England. How to Reach Students—M. Ivar Thulin, Stockholm. How to Secure the Training of Teachers—M. Petersen, Kiel. Alcohol in Pneumonia and Enteritis—Dr. Holitscher, Karlsbad. The Influence of Alcohol Immunity—Prof. Taav Laitinen, Helsingfors.

Wednesday, July 21.

The Effects of Alcohol on the Child—Drs. Erno Deutsch and Imri Doczi, Budapest. Alcohol and the Home—Mrs. Bramwell Booth, London. The Legal Protection of the Child—Dr. R. Hercod, Lausanne, Switzerland. Continuance of the Researches reported at the Stockholm Congress—Prof. Laitinen, Helsingfors. Alcohol and National

Service by representatives of the Navy, Post Offices, Railroads, and Law. Alcohol and Temperature—Prof. G. Sims Woodhead, Cambridge University. The Effect of Alcohol on Mental and Muscular Fatigue—Dr. W. H. Rivers, F. R. S., Cambridge. Public Demonstration.

Thursday, July 22.

The Economic Effects of the Production and Consumption of Alcohol—Sir T. P. Whittaker, M. P., London. The Alcohol Problem in the Light of Life Insurance Statistics—Insurance Councillor Hansen, Kiel. Alcoholism and Insurance Against Accidents and Sickness—Charles Kögler, Vienna. Receptions.

Friday, July 23.

Recent Progress in Prohibition Legislation. International Agreement for the Protection of Native Races against Alcoholism—E. Vietor, Bremen. Methods of Controlling the Traffic in Alcohol. Special Session for Women. The Resistance of the Brain to Alcohol—Prof. Clouston, Edinburgh. The Effects of Alcohol on the Nervous System as shown by Hospital and Asylum Practice—Dr. F. W. Mott, London.

Saturday, July 24.

Alcohol and Criminality—Lieut.-Col. A. B. McHardy, C. B., Edinburgh. Alcohol and Insanity—Dr. Legrain, Paris. Legislation concerning Alcoholics—Dr. R. Brandthwaite, London. Grand Musical Festival at Alexandra Palace. Juvenile Temperance Demonstration. Closing banquet. Farewell to foreign guests.

CIGARETS INJURE BUSINESS
PROSPECTS

Notwithstanding the lying advertisements sown broadcast by this literary bureau [of the Cigaret Trust], the fact remains that any young man attempting to secure employment with this paper would find his chances reduced by thirty per cent. if he smoked cigarets and his chances of keeping his job would decline another thirty per cent. if he continued to smoke them after he got it. Cigaret smoking clouds the brain and saps the nerves.—Editorial in the *New York Journal*.

NICOTINE THE REAL TOXIN OF TOBACCO SMOKE

The conclusions drawn at the close of an article by
Prof. K. B. Lehman in the *Muenchener
Medizinische Wochenschrift*,
April, 1908.

SO FAR as we know, nicotine is the most important, and for all practical considerations, the only poisonous substance in tobacco smoke. Carbon monoxid, sulphuric acid, hydrocyanic acid and pyridin are of no consequence to the smoker. The symptoms of acute tobacco poisoning coincide quite generally with those of acute nicotine poisoning. The ascertained amount of nicotine absorbed from the smoke agrees even very closely with that which is to be expected from the standpoint of toxicology. All circumstances which increase the amount of nicotine absorbed in a given interval of time increase the poisonous effect. The smoke of plant substances free from nicotine contains traces of an alkaloid that shows a similarity to the nicotine removed and probably accounts for the effects other than those of pyridin produced upon children. But the amounts are so small that they are out of consideration for adults.

THE CLEAR SPACE

A FAMOUS artist was asked to give his opinion of a shelf, richly covered with rare and beautiful Chinese vases. He walked straight up to the shelf, and lifted off one of the vases.

"But that's so fine," murmured the host.

"Yes," assented the artist, "but the clear space is finer. It's one of the last things people learn," he added, "that even though a thing may be excellent in itself, nothing at all may be still more excellent."

The free space thus left on the shelf gave at once a look of restfulness and dignity and service to the whole place.

Overcrowded lives do not rest or enrich the world. Space must be left in our plans for that steady quietness and freedom from extra helpfulness which makes for comfort and peace. "Strong men watch and wait," is the wise expression of a French writer. We are too anxious to be accomplishing something, to be hustling about this or that matter, when *the greatest matter of all may be one of silence* that is healing, of prudent independence of judgment, of hopeful waiting, of brave and busy home-keeping, or of giving up some non-essential luxury. The great space-clearer in our lives is patience. To be busy and unhurried in its teaching. "In your patience possess ye your souls."—*Wellspring*.

FACTS WANTED BY EVERYONE

THE admirable article "*Alcohol and the Individual*" by Dr. Henry Smith Williams in *McClure's* (Oct. 1908) can now be furnished by the JOURNAL in an attractive reprint. It summarizes clearly many of the essential facts of modern science as to the effects of the moderate use of alcohol. For busy men and women who want facts, for pupils' essay work it is invaluable. Five cents per copy; \$.50 per dozen.

BOOK LIST

A PERSONAL record covering the developments of any department of knowledge for a period of nearly four-score years, is something rare in literature.*

When this record is illuminated with the clearly remembered impressions of a remarkably keen and observant mind we have a treat. When it comprehends the growth of all grades of elementary, secondary and higher education in the country, dealing sympathetically and wisely with the teacher's most perplexing problems and the essentials to their solution it is of special value to the teaching profession. When, in addition, the writer is a patriot and a philosopher who can point out both the danger to a republic in the rapid influx of peoples untrained in true conceptions of liberty, and the defence against that danger in a properly developed educational system, we have a work that calls for national gratitude.

Such is the book given to America in *Recollections of a New England Educator* by an exemplary product of her Puritan stock and her system of popular education.

THE responsibility of authors for their part in moulding character is deeply impressed upon one who "thinks continually", by the apparent lack of it in many of the new books one takes up. Undoubtedly the present quickening of conscience concerning words and deeds that react injuriously upon public health and morals renders us more exacting than we used to be. We should not be true to the spirit of universal helpfulness now so extensively cherished if we did not protest against the placing of snares and pitfalls in the paths of our fellows.

The compiler of *Japanese Folk Stories and Fairy Tales*** is not more remiss than many others in needlessly injecting into a book for the young a suggestion that is out of harmony with truth and right principles. Fortunately

the time is passed when one can be intelligently charged with fanaticism for objecting to the lines, "Sake for him who is kind, water for those who seek self", which expresses the point of one of those stories, because it is now generally known that truth calls for a direct reversal. But whether at the risk of being considered fanatical or not, the protest must be made. The uncalled for inclusion of the story of "The waterfall the flowed *sake*" has marred what would otherwise have been a good book for young readers.

IN a small volume of one hundred and ten pages, the charming, classic *Swiss Family Robinson**, not yet quite a century old, is retold in condensed and pointed style, for a supplementary school reader. All the best English editions have been consulted and a skilled story-teller secured to present the tale in a form that will appeal to the young people of today. Recognition of a changed public sentiment is shown by the omission of all allusion to the use of alcoholic drinks.

*Uncooked Foods** shows that if people *would*, they *could* live much more healthfully, easily and enjoyably on a system of diet which would throw cooks and catsup makers out of business, but would compen-

sate by opening up to them new lines of industry in the raising of fruits or nuts. The table that would be set under this system would be attractive enough to satisfy the most epicurean. Here is the picture:

A dainty table in a quiet corner, covered with spotless linen and laden with milk, cream, egg-nog, all sorts of fruits and nuts, dates, figs and raisins, luscious melons, lettuce, celery, olive oil, and a dozen other delicious things, all of which being natural, satisfy hunger, furnish the highest form of nutrition, and quickly appeal to and excite the highest sense of taste and enjoyment.

A glance at the appetizing menus and "recipes" given in the book cannot but arouse a desire to try them at least. Among them is one for "egg-nog" which in the language of the popular southern ballad is "nogless", that is, it is made with pure unfermented grape juice instead of alcoholic liquors.

**Recollections of a New England Educator*, by William A. Mowry, Ph. D. Silver, Burdett & Co., New York.

***Japanese Folk Stories and Fairy Tales*, by Mary F. Nixon-Roulet, 191 pages, illustrated. New York, American Book Co.

**The Swiss Family Robinson*, with illustrations by E. M. Bendova, 110 pages, illustrated. New York, A. S. Barnes & Co.

Uncooked Foods, by Mr. and Mrs. Eugene Christman, 246 pp. Health Culture Co., New York City.

Travelling Loan Exhibit

— OF —

Attractive, Anti-Alcohol CHARTS

ENTIRELY NEW

For Pupils, Teachers, Professional
People, the General Public

EXHIBIT consists of 25 Colored Charts (framed, size 22 x 28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other infectious Diseases, etc. No objectionable details. Excellent for No-License Campaigns.

Send for Full Information as to Expense
and Plan for Use.

Scientific Temperance Federation

23 Trull St., - Boston, Massachusetts

The Scientific Temperance Federation

American Branch of the International Temperance Bureau.

Purpose, Methods, Advantages, Membership.

An Educational Temperance Organization

Purpose—To prevent intemperance by the promotion of wise, thorough instruction in the schools of the nation as to the laws of health and the dangers in indulging in the use of alcoholic drinks and other narcotics.

Methods—(1) To cooperate with existing organizations in securing this end, (2) To deepen public appreciation of the need of instruction so that it will be popularly as well as legally required, (3) To bring to its support forces hitherto uninterested in it, (4) To make known the ascertained truth concerning alcoholic drinks and other narcotics so that the facts taught in the schools shall square with it.

Its Membership

Advantage—All members receive free *The School Physiology Journal*, notices of useful new publications, samples of leaflets or other information published by the Federation.

Associate Membership is open to all who desire (1) to have fuller acquaintance with the alcohol and narcotic question which membership in the Federation affords, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance. Anyone may become an Associate Member by the payment of the annual fee of \$2.00.

The Scientific Temperance Federation has a unique place to fill; a distinct message and work. Its aims are fundamental and practical.

Address all contributions, correspondence, inquiries, etc., to THE SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull Street, Boston, Mass.

VACATION OFFER NO. 1

\$3.90 — for — \$1.00

Special Limited Trial Offers.

No Canadian or Foreign Subscriptions Accepted.

HOW TO GET THEM

FIRST, you must be a subscriber to our publication. Your subscription must be paid in advance. If you are not already a subscriber to our publication you can take advantage of this Trial Offer by sending your subscriptions to us at once, for one year, adding \$.60 to the amount of Trial Offer. It is a great opportunity for interesting and profitable entertainment such as has never before been offered, and is now within the reach of every reader of our publication. Current issues for each and every publication will be sent to the subscriber at the time of issue, excepting the Lippincott's Magazine. This magazine will reach the subscriber thirty days later, but Lippincott's is always good. It contains a complete novel in every edition besides a dozen or more good catchy stories. A year old copy is just as readable as a current issue.

8 Leading Magazines each for 3 Months and 2 for 3 Weeks Mailed to your Home Address all for **\$1.00**

Please stop and consider how every member of the family can be enjoyably and profitably entertained by taking advantage of this wonderful bargain in the best class of current literature, made possible by subscribing for our publication.

HERE IS THE OFFER IN DETAIL

Pictorial Review, 3 mos., value \$.45	World Today, 3 mos., value \$.45	Housekeeper, 3 mos., value \$.30
Travel Magazine 3 mos., value .45	Woman Beautiful, 3 mos., value .45	Lippincott's, 3 mos., value .75
Success, 3 mos., value .30	Uncle Remus Home Mag., 3 mos., value .30	Forest and Stream, 13 issues, weekly value .30
Youth's Companion, (13 issues, weekly) value 15 cents.		

The Housekeeper

For 32 years the American housewife's favorite. Every issue filled with useful, practical household matter; good short and serial stories and popular articles. Large size, fully illustrated.

10c. per copy.

Pictorial Review

The fashion magazine designed for the average woman in the average home.

\$1.00 per year, 15c. per copy.

Travel Magazine

A magazine that brings the Whole World to the Library Table.

\$1.50 per year, 15c. per copy.

Success Magazine

A magazine of inspiration with high literary excellence.

\$1.00 per year, 10c. per copy.

The World To-day

For the busy man or woman, the world's happenings, a complete digest of events, also many attractive articles written by the foremost men and women of to-day. Printed in colors.

\$1.50 per year, 15c. per copy.

Youth's Companion

The only paper that pleases the old and young.

\$1.75 per year, 5c. per copy.

Lippincott's Magazine

The greatest Fiction Magazine in America. A complete novel in every issue and many good, catchy, short stories.

\$2.50 per year, 25c. per copy.

The Woman Beautiful

A Dignified and Practical Magazine on Beauty Culture. Each issue containing beautiful plates in color of prominent women.

\$1.00 per year, 15c. per copy.

Uncle Remus's

The Home Magazine

Founded by Joel Chandler Harris, the prince of all story writers. It has all the departments that will please the entire family, with fine illustrations and catchy stories.

\$1.00 per year, 10c. per copy.

Forest and Stream

The big magazine for sportsmen. A real outdoor magazine.

\$3.00 per year, 10c. per copy.

Add the NEW DELINEATOR—Take Them All for \$1.50

Six Months for 50 cents

Double in Size—Double in Value—Beautiful Colored Plates—Six Issues—April, May, June, July, August and September.

Retail Price, 15c. per copy—Value 90c.

VACATION OFFER NO. 2

\$2.40 — for — 50c.

6 Leading Magazines each for 3 Months, Mailed to Your Home Address all for \$.50

Please stop and consider how every member of the family can be enjoyably and profitably entertained by taking advantage of this wonderful bargain in the best class of current literature, made possible by subscribing for our publication.

HERE IS THE OFFER IN DETAIL

Pictorial Review, 3 mos., value \$.45	Woman Beautiful, 3 mos., value \$.45	Housekeeper, 3 mos., value \$.30
Farm Journal, 3 mos., or Youth's Companion, 3 issues, value .15	Success, 3 mos., value .30	Lippincott's, 3 mos., value .75
Add the NEW DELINEATOR, Six mos. for 50c. Take Them All for \$1.00		

The School Physiology Journal, 23 Trull St., Boston, Mass.

Revised Edition 1910 592

SCIENTIFIC TEMPERANCE JOURNAL

— *Continuing the* —
SCHOOL PHYSIOLOGY JOURNAL

“**Y**OUTH is a period of building up in habits, hopes, and faiths. Not an hour but is trembling with destinies; not a moment once passed, of which the appointed work can ever be done again, or the neglected blow struck on the cold iron.”

—*John Ruskin.*

Published at—
BOSTON, MASS.

SEPTEMBER, 1910

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

An Educational Temperance Organization

Purpose—To make known in every possible way, in popular form, the proved facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

REV. CLARENCE A. VINCENT, D. D., Boston, *President*
 REV. D. STUART DODGE, D. D., New York, *Vice-President*
 CORA FRANCES STODDARD, Boston, *Corresponding Secretary*.
 E. L. TRANSEAU, Boston, *Recording Secretary*.
 ROBERT H. MAGWOOD, *Treasurer*.

Scientific - Educational

The only organization making a specialty of collecting and supplying the scientific facts about alcoholic drinks and other narcotics.

Methods of Education

Loan Exhibit of Original Colored Charts. New Scientific Temperance Stereopticon Slides. Editors' Press Circular. Leaflets. Pamphlets. Special information supplied by helpful correspondence.

Membership

Associate Members, annual fee, \$1.50, receive samples of publications issued by the Federation and may obtain special information desired. Sustaining members are those who contribute \$10. The payment of \$100 constitutes one a life member.

Scientific Temperance Literature

Beer and Wine Leaflets	per 100
Alcoholism in Wine-growing Countries	\$.30
Wine to Drive out Drunkenness	.30
Wine a Peril to Childhood	.30
False Claims for Wine	.35
Plain Facts About Beer	.40
Dangers in the Use of Beer, 20 pp.	2.50

Facts Concerning Alcohol	per 100
Drink and the Doctor's Bill	\$.15
Sinning Against the Unborn	.15
The Causes of Alcoholism	.15
Alcohol and the Death-Rate	.15
Alcoholism and Tuberculosis	.35
Effects of Alcohol on School Children	.35
Alcoholism and Degeneration (colored chart)	.65

Sample package .20

Literature ready for distribution

400 leaflets \$1.00. Order as "Package No. 1" or "Package No. 2." Each contains simply stated practical facts about alcoholic drinks. Just what you want to create really intelligent temperance sentiment in your community.

Package No. 1, 50 leaflets each of 8 different kinds.

Package No. 2, 100 leaflets each of four different kinds.

Anti-Tobacco Literature	each
Power of Tobacco Habit	\$.20
Why the Cigaret is Especially Harmful	.20
Use of Tobacco	.05
Boy and the Cigaret	.05
Avoiding a Dangerous Blind Lead (18 page), (Best all-round Anti-Cig.-No. Journal.)	.05

New Century Series

—OF—

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fulness and accuracy of the treatment in regard to the nature and effects of alcoholic drinks and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

• CONTENTS •

	Page
The Elderton Inquiry into Parental Alcoholism	1
How Alcohol Cripples the Circulatory System	2
A French Lawyer's View of Alcoholism in France and the Remedy,	7
Baseball Players Must be Sober,	7
Editorials,	8
The Special Danger in Alcohol for Women, ..	10
A Physician's View of Tobacco Using,	10
Catholic Abstainers Declare for Temperance Temperance Education,	10
Alcoholic Insanity in Italy,	10
Class Room Helps.	
The Theory and Practice of Personal Hygiene.	
The Fox Without a Tail (Cigaret Lesson).	
Sandow's Message to Boys.	
The Blood and Circulation.	
Causes of Consumption.	

SPECIAL OFFER

National Temperance Advocate

A TEMPERANCE PAPER FOR THE FAMILY. TEMPERANCE STORIES, POEMS, FIELD NOTES. MONTHLY NEWS AS TO WHAT GOOD TEMPLARS, ALL CHURCH TEMPERANCE SOCIETIES, ETC., ARE DOING. JUST WHAT YOU NEED.

Advocate, \$1.00 } BOTH \$1.25
 Journal, - .60 }

SCIENTIFIC TEMPERANCE JOURNAL, - 23 Trull Street, Boston, Mass.

Please mention the Scientific Temperance Journal when writing to advertisers.

Scientific Temperance Journal

Vol. XX

BOSTON, SEPTEMBER, 1910

No. 1

Labor

By Henry Van Dyke

They who tread the path of labor where My feet have trod;
They who work without complaining do the holy will of God.

Where the many toil together, there am I among My own;
Where the tired workman sleepeth, there am I with him alone.

I, the peace that passeth knowledge, dwell amid the daily strife;
I, the bread of Heaven, am broken in the sacrament of life.

Every task, however simple, sets the soul that does it free;
Every deed of love and mercy, done to many, is done to Me.

—From the *Toiling of Felix*.

The Elderton Inquiry into Parental Alcoholism

BY E. L. TRANSEAU

A RECENT study carried on in the Galton Laboratory for Eugenics,* is reported to have found that no substantial relation exists between parental alcoholism and defective childhood.

The foundation for such a conclusion could only be obtained by a careful comparison of the children of alcoholic and non-alcoholic parentage. But this was not done in the studies reported in the memoir by Miss Elderton.

ALCOHOLIC AND NON-ALCOHOLIC PARENTAGE COMPARED

A very exhaustive and careful comparison of a large number of children as to physical and mental conditions was made in the Elderton inquiry but it was between the slightly and the considerably alcoholized parents. The memoir itself expressly states that:

Teetotalers were too few to be considered in a class by themselves; they were, therefore, classed with the "sober".

The "sober" were those who were not abstainers, but who did not drink enough to do themselves or their homes any apparent harm. These were assumed to be "non-alcoholic" and were used as such for comparison with the harder drinkers who were assumed to be the only "alcoholic" class.

Neither the number of "teetotalers", "sober" nor any other class is stated in the Elderton study, which was confined to two sets of data: (1) statistics of a school for feeble-minded in Manchester; (2) a school in one of the poorest sections of Edinburgh. From

the original of the Edinburgh report, however, which happened to be accessible, we find that 781 families were included in that investigation. Only 18 of these were "teetotal", and some of those only recently so. The sober families numbered 275.

AN UNWARRANTABLE ASSUMPTION

That it was an error to assume that only the hard drinking parents were "alcoholic" and that the moderate drinkers were "non-alcoholic" is clearly proved by the wide differences found by other investigators between the health of the progeny of abstainers and of moderate drinkers.

The following table shows the percentage in child mortality and abortions obtained by Professor Laitinen in an investigation that covered over 5,000 families in more than a fourth of which parents were abstainers or had been since marriage:

PERCENTAGE OF DEATHS		ABORTION
Abstainers,	13.45 per cent.	1.07 per cent.
Moderate Drinkers,	23.17 per cent.	5.26 per cent.
Immoderate Drinkers,	32.02 per cent.	7.11 per cent.

The Elderton memoir finds a considerably higher rate of child mortality among the parents classed as "non-alcoholic" than Professor Laitinen found in his class of moderate drinkers.

The average child mortality of all the groups classed as "non-alcoholic" in the Elderton memoir is more than double that of Professor Laitinen's abstainers.

The child mortality of the groups classed as "alcoholic" in the Elderton memoir closely approximates that found by Professor Laitinen among immoderate drinkers.

*A First Study of the Influence of Parental Alcoholism on the Physique and Ability of Offspring, by Ethel M. Elderton, Galton Research Scholar in National Eugenics in the University of London.

The truth of these assertions is apparent when the table above is compared with the one below in which is given the percentage of child mortality in the several groups of parents classed as "alcoholic" and non-alcoholic" in the Elderton study:

PERCENTAGE OF CHILD MORTALITY.

So-Called "Non Alcoholic."		So-Called "Alcoholic."	
Manchester Mothers.	26.5	Manchester Mothers.	33.8
Manchester Fathers.	25.8	Manchester Fathers.	33.5
Edinburg Mothers.	28.4	Edinburg Mothers.	34.7
Edinburg Fathers.	28.9	Edinburg Fathers.	32.4
Average,	27.4	Average,	33.6

The Edinburgh "drinkers" were subdivided into two groups, those who drank regularly and those who drank in "bouts" or *sprees*. The child mortality was slightly heavier in the latter class: namely, 32.7 for the fathers and 36.1 for the mothers against 32.1 and 33.4 respectively among the regular drinkers. The table gives the average of the two groups of "drinkers", and the total average. We see how nearly it corresponds to the child mortality of Professor Laitinen's moderate and immoderate drinkers. We are unquestionably justified in substituting the terms moderate and immoderate drinkers for the Elderton "non-alcoholic" and "alcoholic" misnomers.

JUSTIFIABLE CONCLUSIONS

The comparisons made in the Elderton inquiry between the children of moderate drinkers and those of the immoderate were very elaborate and covered height, weight, health, disease, mortality, intelligence, and condition of vision. The following conclusions arrived at were in accordance with the data, which, as we have seen, were very restricted and not generally representative. The words in brackets indicate the terms that should properly have been applied to the classes, inasmuch as those called "sober" were admitted to be moderate drinkers:

1. "There is a higher death-rate among the offspring of alcoholic [immoderate] than among the offspring of sober [moderate] parents."
2. "There is slightly greater height and weight in the children of the sober" [moderate].
3. "The general health of the children of alcoholic [immoderate] parents appears on the whole slightly better than that of the sober [moderate]. . . . The higher death-rate of the children of the alcoholic [immoderate] parents probably leaves the fitter to survive."

UNJUSTIFIABLE CONCLUSIONS

The following conclusions are unwarrantable because the term "parental alcoholism" is

assumed to apply only to the immoderate drinkers, whereas it applies in nearly as great a degree, as the findings themselves show, to the moderate drinkers. The sentences enclosed in brackets show how the conclusions should be stated to be in accord with the drinking habits of the two classes. A question may, however, very properly be raised as to whether the conclusions even thus amended are strictly warrantable by the narrow data used.

1. "Parental alcoholism is not the source of mental defect in offspring." [No more immoderate than moderate drinkers were found among the parents of the feeble-minded children of Manchester.]

2. "The relationship, if any, between parental alcoholism and filial intelligence is so slight that even its sign can not be determined from the present material." [The average intelligence of the children of immoderate drinkers was found to be as high as that of the children of moderate drinkers.]

3. "There is no substantial relationship between goodness of sight and parental alcoholism." [The children of immoderate drinkers were found to have as good eyesight as the children of moderate drinkers.]

"To sum up, then, no marked relation has been found between the intelligence, physique or disease of the offspring and parental alcoholism in any of the categories investigated." [Practically no difference was found between the intelligence, physique, or disease of the children of the moderate and those of the immoderate users of alcohol, in the classes investigated.]

But for the last clause, the sum total of all the conclusions would be that so far as hereditary effects go there is not the great difference between the *use* and the *abuse* of alcohol that is often affirmed.

In view, however, of the highly specialized data used and the entirely different results obtained by investigators whose inquiries have extended over wider fields and have been carefully classified, even this conclusion must be challenged.

Take as one example, Professor Bunge's inquiry as to tuberculosis and nervous diseases in the four classes of drinkers into which he separated the 2,051 families whose histories he obtained:

PERCENTAGE OF DISEASES IN CHILDREN.

Fathers	Tuberculosis	Nervous
Occasional Drinkers.	6.4	4.3
Regular Moderate Drinkers.	9.4	7.6
Regular Immoderate Drinkers.	17.1	11.1
Heavy Drinkers (Drunkards)	24.2	22.2

The moral of the Elderton publication spells more work for those who would extend the dissemination of truth and check that of error. Digitized by Google

How Alcohol Cripples the Circulatory System*

BY JOHN HAY, M. D., M. R. C. P., ENGLAND

IT gives me considerable pleasure to deal with the action of alcohol on the heart, on the blood vessels and on their contained blood, because of the widespread belief in the efficacy of alcohol as a heart stimulant. In fact, when the public speak of "stimulants," with a capital "S," they imply alcohol in some form or other, and, indeed, the same may be said of many medical men. It is their belief that whatever properties alcohol may possess its predominant quality is that of stimulation.

Now, this is a fallacy, widespread and deeply rooted, but none the less a fallacy, and my duty, one of my duties, is to put the facts before you which prove the error of such an assumption.

mouth, throat, and stomach, and can be induced by many causes, such as sipping strong peppermint-water, ether, capsicum, very hot water, ginger and so forth.

This result is brought about by nervous influences passing up from the mouth, throat, and stomach to the central nervous system, and is extremely transitory. In a few minutes the alcohol is absorbed from the stomach and reaches the blood stream. In fifteen minutes the larger portion of the ingested alcohol has passed into the blood. It then exerts its own peculiar action on the heart muscle, the blood, the central nervous system, and all the living cells with which it comes into contact, and this is the really important action for us to consider.



A part of the National Catholic Total Abstinence Convention, Boston, Aug., 1910.

In a person with a healthy circulation there should be no consciousness of the heart's action. The heart acts quietly and strongly, effort and stress are met without discomfort; the blood pressure is neither high nor low, and the arterial walls are soft and elastic. Such being the normal condition, we are to consider how it is influenced by the drinking of alcohol.

Alcohol acts in two different ways which must be carefully distinguished.

1. Reflexly—before absorption into the blood stream.

2. Specifically—after absorption.

Let me make this clear. When a mouthful of brandy is swallowed it at once produces a sense of warmth and tingling in the mouth and throat, and possibly in the stomach; there is a feeling of comfort, and flatulence may be relieved. Simultaneously the heart beats faster and possibly a little stronger. This effect is reflex and is caused by the irritant action of the alcohol on the mucous membranes of the

ALCOHOL CRIPPLES THE CARDIAC PUMP

We are here to discuss whether this constant recurrent flooding of the blood stream, even with small quantities of alcohol, is or is not detrimental to the heart, the blood vessels and the blood. Does it make the action of the cardiac pump more efficient? Does it help to keep the blood pressure at an efficient level? Does it tend to maintain the youthful elasticity of the arteries, and so increase the number of our years? And lastly, does it increase the functional activity of the blood, and make it easier for this vital fluid to protect us from disease? These are the questions. My answer is an unhesitating and uncompromising no. It does none of these things. A strange conclusion when it is remembered that we are discussing the action of a so-called stimulant. Instead of the heart muscle being stimulated it is depressed. Much experimental work and prolonged investigations have proved this beyond question. Under the influence of small

quantities of alcohol, the heart contracts less efficiently and less powerfully, the cardiac pump is crippled and its force diminished. If the amount of alcohol is excessive, and the intoxication profound, the heart muscle may be so seriously affected as to cause acute dilatation of the heart and sometimes death.

EFFECT ON THE BLOOD PRESSURE

What do we find to be the action of alcohol on the blood pressure?

There is sometimes a transitory rise for a few minutes after a dose of alcohol has been swallowed. This rise is slight and rapidly passes away to be followed, in most cases, by a fall.

The characteristic action of alcohol in therapeutic doses, that is, in amounts such as are ordered to patients, is distinctly to lower the blood pressure. Rarely, this action is of some service, as a rule it is detrimental. In febrile conditions such as typhoid fever, pneumonia, and so forth, the blood pressure is quite low enough, and it is irrational to still further diminish it by the administration of alcohol.

Alcohol lowers the blood pressure by acting on the central nervous system, causing messages to be sent down to the smallest arteries; these then dilate, and the blood flows through them more easily. The skin is flushed, and feels warm, and gives a sense of comfort and well-being.

Drs. Munro and Findlay, of Glasgow, in a most valuable and careful paper, summarize the position as follows: "In fevers and other morbid states where the heart is already disabled by pathological processes, alcohol must still further cripple the cardiac muscle fibres. Alcohol does not stimulate the heart, nor does it constrict the vessels; in other words, it is neither a cardiac nor a vascular tonic, and it has been proved beyond question that it is unable to raise either a normal or a low blood pressure."

ACTION ON THE BLOOD VESSELS

The arteries are elastic tubes, soft and strong, having muscular fibres in their walls, and their inner surface covered by a delicate lining membrane. With the advance of years they alter—they lose their softness and elasticity and become tough, fibrous changes make their appearance, globules of fat are deposited in their walls, and ultimately lime salts may produce an almost stony hardness of the arterial tube.

There are, unfortunately, many factors in addition to that of years which bring about these degenerate changes in the vessels. Alcohol is admittedly potent in initiating, in precipitating, and in hastening this senile con-

dition. The onset and progress of these changes are insidious, the results are disastrous.

The various organs of the body, including the heart, are less efficiently supplied with blood, and as a necessary consequence their working power is impaired. The brain becomes less active, the mental grip is weakened, the liver becomes sluggish, the action of the kidneys defective. The arteries are brittle and may give way, with grave consequences. In a word, old age comes on apace, with premature lack of energy and vigor, lassitude and mental hebetude.

Before proceeding to the important action of alcohol on the blood, I must just refer in passing to the changes which slowly take place in varying degree in the heart muscle of those who habitually take alcohol. Degenerate changes of a fatty nature occur and fat is also deposited between and about the cardiac fibres, impeding the action of the heart. The small arteries carrying the blood to the musculature of the heart are thickened and may be partially occluded [closed]. The heart becomes larger and less powerful, and its owner notices that he tires more easily and that exertion causes him to feel unduly short of breath. The heart is ill-prepared for any physical stress or the ordeal of an acute illness, and in many cases its enfeebled condition is the factor which determines the fatal ending.

THE PROTECTIVE MECHANISM OF THE BLOOD

The blood is a living tissue, composed of a fluid, the plasma, in which are suspended millions upon millions of small bodies—the corpuscles. The corpuscles are of two kinds, the red corpuscles and the white. The red have one important function, that of carrying oxygen to the tissues. Oxygen is absolutely necessary for the life of every living cell in the body, it is necessary for the production of heat and energy, and it is also necessary for the burning up of the waste products.

The white corpuscles, often called the leucocytes, are much less numerous, than the red: their duties are of a different order. They are very largely responsible for the maintenance of health by the prevention of infection. They have the power of attacking any bacteria with which they come into contact, enveloping them, and finally digesting them; this well-known process is termed phagocytosis, and is an important factor in the production of immunity.

Not only do these leucocytes kill and digest the germs of disease and thus preserve us from much harm, but they also produce certain bodies called antibodies or antitoxins, which in themselves are of incalculable value

as part of the great protective mechanism with which we are endowed.

The plasma itself possesses certain properties of great utility in the building up of this protective mechanism already referred to. One such property is that it contains bodies, called opsonins—these make the bacteria and germs of disease more palatable to the leucocytes; unless these substances are present in the blood phagocytosis is impaired. Phagocytic activity is not merely a matter of the activity of the white corpuscles, but is favored and stimulated by these opsonins.

Different bloods vary in the amount of their opsonins and it is of great importance that there should be a large quantity of these bodies present to aid the leucocytes in their battle with the germs. The amount of the opsonins can be increased by vaccination and also by oral medication, and this fact is the basis of much recent treatment.

There is another property possessed by the plasma, an extremely valuable one. There is inherent in it the power of destroying and dissolving bacteria. This exists in addition to that possessed by the white corpuscles just described. This peculiarity of the plasma can be greatly increased and strengthened by properly applied means and well-recognized methods.

These are some of the means by which the blood protects us from disease and death. The blood and its various constituent parts are constantly building up a barrier between us and infection. Without this beneficent protective mechanism we could not exist; its value is incalculable and the importance of keeping it at the highest point of perfection is obvious.

HOW ALCOHOL WEAKENS THE DEFENCES

Now let us consider the effect of alcohol on these life-preserving properties of the blood. Alcohol influences each of the characteristics of the blood just enumerated, and its influence in each specific case is bad. Under the influence of alcohol the red blood corpuscles become less efficient oxygen carriers, oxidation is impaired, the changes essential to the perfect nutrition of the tissues are interfered with, and the necessary oxidation or burning up of the waste products is prevented. The result is fatty degeneration, fatty infiltration, and the retention of waste products. The vitality of the tissues is impaired, and the activity of the various organs diminished.

Under the influence of alcohol the white corpuscles are less active in their phagocytosis, they are more sluggish, and offer a less strenuous fight against any invading germ; then also, and of very great importance, those very

qualities of the plasma by which the leucocytes are assisted in the battle against disease are rendered less effective. Immunity is lessened, there is greater liability to infection, and in the event of infection having taken place the probability of a fatal termination is considerably increased.

As Professor Laitinen sums it up in the last Norman Kerr lecture: "It seems clear, therefore that alcohol, even in comparatively small doses, exercises a prejudicial effect on the protective mechanism of the human body."

INCREASED DEATH RATE IN PNEUMONIA

A physician treating a man suffering from acute pneumonia fears and fights against two things: One, the actual poisoning of the patient by the toxins of the pneumonia germs; the other, failure of the heart. If the patient dies one alone, or both, of the above factors are responsible. The poisoning, as indicated by the fever, the delirium, the frequent pulse, and the rapid breathing, results from the growth and activity of these germs, and the recovery and well-being of the patient depends on the counter-activity of the leucocytes and the plasma of the blood by which are produced the antibodies, which, in their turn, nullify and counteract the virulent poison. When this is accomplished the crisis occurs and the danger is practically over. The development of the crisis is, therefore, dependent on the protective mechanism, about which we have been speaking, and which is rendered less efficient by alcohol.

The death rate among alcoholics attacked by pneumonia is extremely high, ranging between 60 per cent. and 70 per cent., and it is probable that one cause of this terrible mortality is the lack of resisting power which characterizes such patients.

The second possibility dreaded by the doctor in a case of pneumonia is heart failure. Picture to yourselves what is happening—one lung solid, entailing greatly increased work on the heart, the fever damaging the muscular fibres, and the defective respiration augmenting the difficulties against which the heart is struggling.

In such a fight every handicap is serious, for sometimes even the healthiest heart is unequal to the task; much more likely to give way is a heart whose muscle fibres have been deteriorating slowly and insidiously for years. Such a heart, when compelled to cope with the stress of an acute pneumonia, dilates and fails, and death occurs, because the heart was insufficient to the strain.

SUSCEPTIBILITY TO TUBERCULOSIS

The same general principles apply also to patients suffering from consumption. This dis-

ease tends to be chronic, and the clinical picture is one in which there are periods of moderate health separated by relapses—the higher the resisting power of the patient the fewer the relapses, while the likelihood of permanent cure is enhanced. A drinker of alcohol is more susceptible to the infection of tuberculosis; and when infected, the disease tends to make more rapid progress and is less amenable to treatment. This intimate relationship between pulmonary tuberculosis and excessive drinking was brought to my notice some years ago in a very striking manner. I was then a resident medical officer in a large union infirmary. One of the wards devoted to pulmonary tuberculosis contained thirty-six beds, and in this ward most of the patients suffered from fairly advanced consumption; of the thirty-six patients, thirty-four confessed to lapses to

immoderate drinking. The other two were children. Comment is unnecessary.

From a consideration of the facts I have laid before you, certain conclusions seem to be inevitable:

1. That alcohol is not a stimulant but a depressant.
2. That alcohol slowly and insidiously renders the heart less able to meet the calls on its reserve power which may be made upon it.
3. That by depreciating the protective mechanism, alcohol renders those who drink it more liable to infection.
4. That being infected, their chance of recovery is diminished and the duration of their illness increased.
5. That alcohol tends to induce premature senility.—*British Alliance News*.

The Value of Literature Work

BY HON. OLIVER W. STEWART

OUR speakers are needed, our public meetings must be held, we must not decrease our work along those lines, but there is great need of continued effort along the lines of distribution of literature.

Consider first of all, the effect upon the people who receive the literature. If the literature takes the form of a representative paper, the coming of the paper into the hands of the indifferent is certain to have at least a slight impress upon the mind. He through whose hands the paper goes is almost sure to keep in mind some fact in connection with it—if nothing more, at least the fact that he did see such a paper and also that it was devoted to a great reform.

If the literature takes the form of leaflets or pamphlets, the effect certainly is good. One might receive one leaflet, give it a glance and allow it to pass out of his mind, but the continual bombardment of many leaflets, pamphlets and tracts will sooner or later leave upon his mind a general impression to the effect that the advocates of this reform are wide-awake, that they have plenty of argument and that they are tireless in the presentation of that issue. That state of mind with many men is certain to be followed by a desire for investigation, which means that literature passing into their hands later will be read.

There is no means of education equal to the printed page. Nothing else can be a substitute for it. The man who circulates or distributes literature in any community can do so with the feeling that he is following the most practical and systematic plan of the

work that can be devised. The printed page cannot be so easily misunderstood as the public speaker. A meeting is held in a town; the speaker says something startling but true; perhaps he takes the train after his address for his next appointment, or at least goes early the following day; the speech is discussed on the street corners; men are thrown into discussion as to what he said; some understood him one way and some the other; no one can absolutely settle the controversy, and many a time the real argument of an address is lost sight of in a general discussion over whether the speaker did or did not say something which may not have been vital to his argument. The printed page, it is true, may provoke discussion. Men may not understand the position taken, but at least the statement of the position is there before them, in black and white, and it is easy to see whether the particular point in controversy is one that is vital to the general argument.

I would stimulate a demand for more literature, which would set our best thinkers and writers to work, which would make readers out of the masses of American citizenship, resulting in education, knowledge, political independence, and in turn, the overthrow of the legalized liquor traffic. Though my wish is not to be granted in some miraculous way, and though I recognize the fact that to train this army of workers along the literature lines, is, of itself, a life work, we are making progress and the time will soon come when a hundred will be at work where one works now.—*National Prohibitionist*.

A French Lawyer's View of Alcoholism in France and the Remedy

A NOTABLE Congress held by the national temperance societies of Belgium in June was attended by the King and other state officials who heard an eloquent address by Cardinal Mercier of Liege.

There was also present as speaker, Henri Roberts, an attorney of Paris, who, after congratulating the Belgians on the progress of their struggle against alcoholism and the interest and sympathy manifested by their king, proceeded, as reported in *La Clairiere*, to tell of the adverse conditions in France, of the havoc being wrought by alcohol, the inability to secure strong legislative aid because of the political dominance of the liquor interests, and the hope cherished of great results from the education of the young.

It is not an encouraging picture which M. Roberts draws of conditions in the typical wine-drinking country.

"In our beautiful country of France, alcohol has made frightful progress and such great ravages that we may claim, alas, the sorrowful privilege of holding the first rank as regards the progress of alcoholism. Entire provinces such as Normandy and Brittany have been decimated. In some departments we have seen the population diminish by a half, in others by a third or a fourth, as a result of the ravages of alcoholism. It has been proved that 40, 50, and even 60 per cent. of the young men offering themselves for military service are unfit. A man who has written much upon this question, and who is both a philosopher and a statesman, has said that every year the progress of alcoholism in France costs the country the equivalent of an army corps.

"Professor Landouzi, dean of the Paris Faculty of Medicine, one of the most illustrious of French medical scientists, has said, 'Alcoholism is the road to tuberculosis.'

"In fact, the progress of tuberculosis in some departments is frightful, and it keeps step with that of alcoholism. Numerous cases of insanity which fill our hospitals are caused by alcoholism. The increase of criminality is due almost entirely to the progress of alcoholism.

"In our villages you can see a saloon for every two or three houses. In the larger cities they are more numerous."

The remedy proposed by the French advocate was example and instruction, the example of the mother, instruction in the schools, and when the young man enters military service, the care of an army officer who is resolutely combating alcoholism.

Baseball Players Must be Sober

BY CONNIE MACK

THE following statement by the Manager of the American League Base Ball Club of Philadelphia (the "Athletics") which this season has won the largest percentage of games in the American League and will compete with the National League winning team for the pennant is of special interest. It is taken from a personal letter to the secretary of the Scientific Temperance Federation replying to an inquiry as to the customs or requirements concerning drink among baseball players.

There has been a great change in baseball during the past fifteen years. This has been due in a great measure to the class of men who are now making up baseball teams. In former years, players did not receive very high salaries, and naturally we did not get the class of players whom we are getting today, as the salaries are now very high, and we have in our profession, I might say fully fifty per cent. of college players. The balance of our players with a very few exceptions, are all well-educated men. Alcoholism is practically eliminated from baseball. For instance, I have twenty-five players. Of that number, fifteen don't know the taste of liquors. The few remaining, may, possibly, after a game of ball, take a glass of beer. They do not make a practice of this. Neither do we restrict them from doing so if they desire. They know that we do not approve of their drinking, and the positions that they hold, and the salary that they receive keep them from any such thought as becoming accustomed to drink. I often get into an argument caused by remarks that such and such a player had been seen taking a glass of beer. There is no class of professional men that is watched so closely as the baseball players. If seen taking a drink, a rumor is immediately started that the player was seen drunk last night. This travels very swiftly and is a great injustice to the player, who would not under any circumstances take the second drink. I have had so many arguments that I usually put the matter in this way: Take twenty-five from the baseball profession, and the same number from any bank or brokerage house, and you will find that the percentage using intoxicating liquors is far greater with the latter. I actually believe that in five years from this date at least ninety per cent. of the players will be strictly temperate.—*Sunday School Times*.

Scientific Temperance Journal

Founded by Mary H. Hunt

Single Subscription\$0.60 a year

CLUB RATES

Clubs from 5 to 50\$0.50 each
Clubs of 50 and over40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 53 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered as second class matter June 1, 1909, at the postoffice at Boston, Mass., under the Act of March 3, 1879.

'Twas said: "When roll of drum and battle's roar
Shall cease upon the earth, O, then no more
The deed, the race, of heroes in the land."
But scarce that word was breathed when one small hand

Lifted victorious o'er a giant wrong
That had its victims crushed through ages long;
Some woman set her pale and quivering face
Firm as a rock, against a man's disgrace;
A little child suffered in silence lest
His savage pain should wound a mother's breast;
Some quiet scholar flung his gauntlet down
And risked, in Truth's great name, the synod's frown;

A civic hero, in the calm realm of laws,
Did that which suddenly drew a world's applause;
And one to the pest his lithe young body gave
That he a thousand thousand lives might save.

—Richard Watson Gilder.

Self-Control for Achievement

A GREAT aviation contest in Boston recently brought together aviators from this country and abroad, and five hundred thousand spectators who watched from the field and from every hill-top and house-top within range of vision the various trials of skill and power. Speed, endurance, height, accuracy,—these were the tests over land and sea that won the enthusiasm, wonder, and admiration of the watching thousands.

THE marvel of it to the untechnical observer was not so much that man was actually in the air, but the power and skill that, against the force of gravitation, enabled him to leave the earth and soar up and up in widening circles until fairly lost from sight in the distance where beginnings of twilight obscured him at the thousands of feet altitude. Then came the return, when deliberately and gently as though descending from sky to earth on some unseen cable under complete control the aeroplane slipped again into its appointed place. Given the instrument, in that control lay the secret and the success of the achievement.

A MOTHER who had reared a family of children once said that experience and observation had led her to believe that one of the

fundamental and earliest qualities that should be developed in a child is self-control. It is this, President King of Oberlin has said, "that puts a man in possession of himself, and enables him to use all his resources, all his opportunities to the full." It is a positive, not a negative quality. Its motive is not mere self-repression but the highest and noblest self-expression.

IT WAS no deprivation to the aviator to control his machine instead of letting it come down any way that it would. He was looking to the perfect accomplishment of his purpose. The athlete does not begrudge the hours of training and the laying aside of luxuries in anticipation of his perfect achievement. The idea of fitting one's self well to meet adequately life's opportunities and responsibilities is perhaps the greatest incentive that can be urged for deliberately planning to leave out of life habits that will interfere with self-mastery, especially if, like the alcohol and tobacco habit, they have the power of impairing the very power on which self-control rests.

PERHAPS, unconsciously, abstinence, has been made to appear too often as a species of the virtue of self-sacrifice instead of a door to freedom. Undoubtedly it is good for human nature to drill itself in self-denial, but to regard abstention from alcohol and tobacco as a variety of it is to give their use a dignity as a permissible indulgence which is not justified by present-day knowledge.

Science indicates that the motive for abstinence should be shifted from self-sacrifice to self-mastery.

The Meaning of Increased Use of Fermented Drinks

PROBABLY no statistician will ever be able or will attempt to determine exactly the relative responsibility of distilled and fermented liquors for the evils of alcoholism. Under present conditions this is practically impossible. There is this much to be said for the proposal from some quarters to prohibit the manufacture and sale of distilled liquors as a forward temperance measure, it would tend to eliminate these liquors as a factor in producing alcoholism, and we should be the better able to see the true results of beer and wine which are now often laid off on the shoulders of the scapegoat whisky. The distilled drinks are undoubtedly responsible for a great deal of mischief, but at present they have to bear most of the onus also of damage actually done by the fermented drinks.

IT is generally conceded that in the United States fewer persons on the whole are drinking alcoholic beverages than formerly. Since the per capita consumption still remains high, this can only mean that the persons who do drink are drinking more heavily with all that that implies in concomitant individual and social evils of alcoholism.

The question of *what* these drinkers are consuming is, therefore, an important one.

The past seventy years brought a decrease in the per capita consumption of spirits and an increase in beer, wine and other fermented drinks as shown by the following table.

PER CAPITA CONSUMPTION OF ALCOHOLIC DRINKS IN THE UNITED STATES

Year	1840	1908
Wine (gallons)	.29	.60
Malt Liquors (gallons)	1.36	20.97
Spirits (gallons)	2.52	1.44

In other words, the consumption of spirits decreased almost one-half; the consumption of fermented liquors was multiplied more than twelve times.

BUT this change in the drink used did not decrease the dangers from alcohol. On the contrary, it increased them, as the amount of absolute alcohol consumed per capita was .28 gallons greater in 1908 than in 1840. The estimate is based on an alcoholic content of 10 per cent. for wine, $3\frac{1}{2}$ per cent. for malt liquors, and 40 per cent for spirits. As a matter of fact, this is probably an under-estimate as many of the wines and malt liquors contain a much higher content of alcohol. The slight decrease in the per capita consumption since 1908 is not sufficient to change these figures materially; though it is to be hoped that it is to be regarded as a favorable symptom of a genuine decline in the consumption of alcohol.

It is evident, however, that the chief responsibility for present alcoholism with its consequent evils must now be laid at the door of the fermented liquors, and that we can not logically entertain hopes of diminishing it by an increased use of beer and wine, even if there were no other evidences from other countries of the futility of this proposition.

System or Casualty

IT is said that the victory of the socialists in Milwaukee in electing a mayor was largely due to the well-planned campaign of education in socialistic principles, that twelve hundred men were pledged to distribute literature sent out by a central committee in territory assigned to each one.

The article by Mr. Stewart in another column sets out clearly the reasons for a revival of systematic literature distribution as a method of temperance education. We are past the stage where mere invective, however true or vigorous against the liquor traffic or the drink habit is sufficient to win public opinion to the staying point of continuous pressure against drink which is needed to hold progress steadily in its way. Hence it is encouraging to observe signs of a revival in interest in literature distribution. The Ohio Catholic Total Abstinence Union at its last convention endorsed a proposal to form "The League of the Cross", one feature of which is a promise by the class of members known as "promoters" to distribute each year at least two dollars' worth of temperance literature. Several of the Protestant denominations by their temperance committees or societies are distributing millions of pages yearly.

It may well be questioned, however, whether all this work, fruitful as it undoubtedly is, might not be turned to still greater account by more systematic methods. Months before an anti-saloon campaign is begun there ought to be a definite campaign of the voters in the facts about drink itself in its practical relations to health, efficiency, and heredity. The two issues can not be divorced though they may be dealt with at different periods. Thus will be secured a well-informed public to appeal to for closing the saloon, and, what is equally important, for keeping it closed, while the beer-wagon and the licensed grocer will be less likely to reap their harvest from liquors delivered and consumed at the homes.

The SCIENTIFIC TEMPERANCE FEDERATION is prepared to suggest plans and literature for this work. Notes concerning literature will be found in the advertising columns. The fact might as well be faced that the pro-alcohol forces are already in this field supplying the people with misleading statements in attractive pamphlets sent out by the million. One does not doubt the ultimate outcome, but it is perfectly evident that system and organization and multiplication of effort in making the truth known must take the place of the now too-often sporadic and occasional effort.

Give me an ideal that will stand the strain of weaving into human stuff on the loom of the real.—*Van Dyke*.

Blessed be mirthfulness; it is God's medicine; one of the renovators of the world.—*Beecher*.

The Special Danger in Alcohol for Women

BY ERNEST E. HALL, M. D.

IN addition to what has been said upon the effect of alcohol in lessening self-control, I wish to impress deeply upon you that as alcohol is used to wreck the young man, it is also a recognized agent in co-operating toward the downfall of women. This is fully recognized by those who traffic in human degradation.

A tipling woman is always under suspicion, and when once the appetite is formed a woman will go to great lengths, if necessary, to obtain the money to purchase liquor. Many a woman dates her downfall from the loss of self-control owing to a bottle of wine.

I hope the practice of tipling which has become so common in some eastern centres has not become prevalent in California. Dr. Lydston says: "If the increase of tipling among women does not indicate a lowering of the moral standard of society, the observations and deductions of physicians and sociologists on the effect of alcohol on women are fallacious."

On account of the greater emotional development of women, alcohol is especially dangerous. Flushed with alcohol, women are apt to forget the restraints of modesty. Base passions spring into expression, the conversation tends to subjects which should not be named in decent society, and when the constraints of self-respect break down with the moral elements of the brain cells, indiscretions are the natural consequence. The moral interests of the nation are in the hands of women, and the only way by which women can lead men straight is to be straight themselves.—*From an address delivered at Leland Stanford, Jr., University.*

Physician's View of Tobacco Using

THE fact that many doctors smoke is sometimes quoted as evidence that tobacco can not be harmful else those supposed to know most about health would not use it.

Replying to a writer who claimed that smoking is not merely a sensual pleasure, but is, also, one of the agents by which man is helped to meet and conquer certain adversities and limitations of his environment, Richard Cole Newton, M. D., says (*Boston Medical and Surgical Journal*, Aug. 12, 1909):

"Dr. Francis Delafield, the well-known former professor of pathology and the practice of medicine in Columbia University, once said to me, 'Doctor, no one ever used

tobacco in any amount at any time without some injury'."

In addition to this testimony, Dr. Newton states that he does not remember ever, to have asked a medical man who used tobacco if he did not consider it injurious to himself without receiving an evasive or affirmative answer. "Man will ever try to delude himself into believing that whatever ministers to his sensual pleasures can not harm him. Yet it is quite evident that the truth about our personal habits can not be determined until in the white light of science every question of personal and domestic hygiene has been thoroughly investigated and followed out to its logical conclusion."

Catholic Abstainers Declare for Temperance Education

AMONG the excellent resolutions passed at the Fortieth Annual Convention of the Catholic Total Abstinence Union of America held in Boston, August 7-13, were the following:

"We recognize that the preservation of the child is absolutely necessary for the future protection of both Church and State. Be it therefore

"RESOLVED: That we commend the practice of the administration of the Total Abstinence Pledge to children at the time of Confirmation and First Holy Communion. We urge their formation into societies, and beseech that parents will set the example to their children of sobriety by associating themselves with a Total Abstinence Society.

"We recognize with pleasure that advanced education instructs the child regarding many dangers of a physical character that will confront it in the world. We can not fail to recognize from statistics that the greatest danger to the growing generation is intoxicating liquor. Be it therefore

"RESOLVED: That we urge and request introduction of text books into Catholic schools so that the child early in life will become scientifically acquainted with the dangers incident to the use of alcohol."

Alcoholism Insanity in Italy

THERE seems reason to hope that pella-grous insanity will ultimately disappear from Italy. Yet with insanity due to alcoholism, the figures point to the opposite conclusion.

"In 1874 the cases of alcoholic insanity numbered 204; in 1895 they were 1,227, and in 1907 they were 2271 in number. Lamburini notes that a history of alcoholic excess in the parents or ascendants, can be obtained in no less than 85 per cent. of the insane."—*British Medical Journal*, May 14, 1910.

Class-Room Helps

Conducted by Edith B. Mills

The Theory and Practice of Personal Hygiene*

SUGGESTIONS FOR INTERMEDIATE GRADES

MAY I come in and study your hygiene work a little while, Miss Loren?" said the Observer, one day to the teacher of a certain sixth-grade room where it was said the work in hygiene and temperance was specially well done.

"Certainly," was the cordial reply of the sweet-voiced, alert little teacher; "But I fear that if you wish particularly to see class work I cannot show you very much. You see," and she dropped her voice almost as though confessing a misdeed, "so much of my work has been practical. When I began to teach I used to give beautiful lessons in hygiene, but although the children were interested and enjoyed them ever so much, I was not satisfied with the progress they were making in forming hygienic habits. Presently I began to talk privately with the pupils and then I gained new light on the subject. For instance, a boy would tell me that he knew some man who had smoked for a long time and was very strong and healthy; others might speak of people who sleep in unventilated rooms or ate whatever and whenever they pleased, or took no care of the teeth, and still remained well.

"My teaching the lessons carefully was correct for there could be no permanent basis for hygienic habits without an understanding of the reasons for them. But those talks with the children opened my eyes to a clearer understanding of the fact that we deal with child not mature minds; and that since they are little influenced by things in the abstract, everything must be made concrete. The experience of children is very limited and, being immature, they cannot reason back from effect to cause, hence they find it almost impossible to believe the book and the teacher which instruct them that unhygienic living, including the use of narcotics, can decrease the joy of living, cripple efficiency, and, possibly ruin them. How to obviate these difficulties in connection with the instruction and how to make it blossom into habitually hygienic living were the questions I pondered deeply and long.

"At last I decided to make an experiment for this year at least, and now at the end of it the results, I think, have justified the experiment.

"The school nurse was lovely, perfectly willing to examine all the children as her duty required, but I believed I could secure better results if I kept her in reserve. Accordingly, although she looked in upon our room at her appointed times, and of course attended to cases of sickness, I, myself, examined heads, teeth and skins and tried to have the untoward conditions corrected, often visiting the parents to persuade them to do the proper thing. If I found it difficult or impossible to get the desired result, I could then bring up my reserves, i. e., the nurse. I would say that evidently we must refer this matter to the nurse, and the impression was given to both children and parents that any case thus referred was more serious and certainly must have attention. Sometimes merely to speak thus of the matter was sufficient. This plan has worked much more successfully than when I followed the usual method."

Dr. Gulick has pointed out that the best and surest method of accomplishing any large undertaking—and certainly the training of children which results in the formation of all hygienic habits is a great one—is to resolutely avoid attacking it as a whole. There is apt to be discouragement at the outset and the chances are that its successful completion will lag or even fail. But if it be divided into "blocks" or parts that can be conveniently handled and completed, effort is concentrated, and one block after another is attacked with fresh courage and interest and successfully reduced. Miss Loren could apply this principle because the teachers in the other grades could supplement her work. So she made especial effort to inculcate habits of ventilation of sleeping rooms, and cleanliness of the head, including hair, ears, neck and teeth, with particular emphasis on the care and preservation of the teeth, and, also, to prevent cigaret using. She carefully taught the text-book work required by the course of study, including the effects of alcohol and of cigaret using, and she proved, as any teacher can, that the subject of hygiene and temperance when presented with the same earnestness and skill as other branches, is intensely interesting to children.

*Prepared from notes obtained from a successful Boston teacher whose school was visited.

Some of her methods were very suggestive and the writer jotted them down.

The dominant thought for the year's work was the formation of permanent hygienic habits in the group selected, founded on thorough knowledge of why they were important.

VENTILATION

IN CONNECTION with ventilation the text regarding respiration, the need of pure air, and the bad feelings and results from breathing impure air, and the simple methods of ventilating homes and schools were carefully studied and explained.

How many children sleep with the window open? How far is it open? If any of you do not have it open at all, can you not hereafter open it a little, if only a crack, wide enough to slip your finger into? and later cannot you open it two fingers wide? Such questions were asked frequently, and here, as with reference to the care of the teeth, she was careful to impress the children with the idea that truth is the most important thing of all. It would, of course, be bad for the health not to open the window or to brush the teeth, but to say what was not true for the sake of having one's mates think better of one was a real harm to one's inner best self. The highest premium was set on the truth. She believed that they became quite trustworthy.

There were often home prejudices to overcome but by asking only a little at a time and persistently following up every advantage, the time came when the public opinion of that room was so strong for good ventilation that a child was ashamed to have to say that he slept in an impure atmosphere.

CLEANLINESS

WHEN school opened, her examination of heads showed an unusual number of children whose heads were affected with pediculosis. These children were furnished at once with the regular nurse's slip informing the parents of the condition and giving directions for treatment.

She looked after these children quite often to see if they were following directions, and where they needed a little help the school nurse helped them; if they neglected to do what they ought the nurse emphasized the teacher's work. So the heads were cleansed and the teacher by inspecting all pupils once in about four to six weeks, discovered the few sporadic cases occurring and prompt treatment saved the children, their mates and teacher much trouble.

The structure of the *skin* and the need of general cleanliness of the body were carefully taught, sketches on the blackboard, etc., being used there as elsewhere to give definite ideas and fasten the teaching in mind. The superficial cleansing of ears which is apt to be in evidence when children do it for themselves was present in some cases, whereupon the teacher amused the children very much and so impressed the lesson by saying that she found that nearly everyone was careful to keep the "reception hall" (the opening to the ear) clean, but that some neglected the "attic" (the upper part) and the "back bedroom" (the deep crease in the front of the ear). From time to time when the "attic" and "back bedroom" were found not quite clean, they were referred to by these names, and so, merrily, they fared to the stage where "reception hall," and "back bedroom" were equally cared for.

The Fox without a Tail

CIGARET LESSON FOR PRIMARY GRADES

A FOX was once caught by the tail in a trap. He knew he would be killed if the hunters found him. So he managed to get away, leaving his tail in the trap.

He felt very much ashamed to be without a tail, and tried to keep from meeting any of his friends. He was afraid they would laugh at him.

After a while he called his friends together and talked to them about it.

"You really can't think," said he, "what a nice time I have without a tail. Tails are so much in the way. I can get about much more easily since I lost mine.

"I am sure you would all look a great deal better and be much happier, if you would have your tails cut off."

"If you think so," said an old fox, "why didn't you have your tail cut off before? I think you would be very glad to get it back again if you could. You want us to have our tails cut off only that we may look as bad as you."

Once there was a boy in — (quote some known case or some clipping if such is available) who learned to smoke. He began by using cigarets which are about half as big as your little finger.

Very soon this boy learned to smoke a number of cigarets each day and to draw the smoke into his lungs. This made him weak and he became a slave to cigarets. His appetite grew poor. He grew nervous and could not sleep so well as he used to. Exercise made

his heart beat so fast that he could not enjoy the ball and other brisk games. He had to look on while the others played. He did not grow so fast as the other boys and was not so sound and strong. He could not study and keep up with his class. He became untrustworthy and nearly everybody lost respect for him.

He was afraid the other boys would laugh at him, so he said to them, "You really can't think what a nice time I have with cigarettes. They are not at all in the way and I am sure you would look better and be much happier if you learned to smoke them." But one of the boys said, "You only want us to smoke cigarettes so that we will not get along any better than you do."—Adapted from Coleman's *Physiology for Beginners*.

LESSON SUGGESTIONS

The preceding story may be used quite apart from the regular lesson as supplemental reading lesson, without comment, the pupils being left to make the application; it may be used for reproduction in language work; the story may be read, or, better, told and discussed or used as the basis of an oral lesson, simple explanations being made as to why the results mentioned in the next to the last paragraph, followed; or, after reading or telling, the pupils may be asked to mention the different ways in which the boy was harmed, these written upon the blackboard. If used in a grade where books are used, the preceding may be written in question form as, "Why could he not study and keep up with his classes?" and all pupils required to copy them, look up the answers in text-books and write them out for the next lesson.

ILLUSTRATIONS

Pictures of the heart, lungs, and other illustrations, avoiding pathological and other unpleasant ones, may be used to fasten the facts in mind in as many ways as possible. One means of doing this with small children is to use the main facts as a picture story as suggested below. This may be written on the blackboard, dashes taking the place of words in parenthesis, the children suggesting the proper words to be filled in; or, it may be written on a sheet of brown paper, chart fashion, the words represented by pictures or simple drawings, and the children asked to read it. If made in this manner it may be used for other classes and for review work. For such work the children may copy the sentences and insert pictures cut from advertisements or during the paper-cutting work. The

heart and lungs would have to be represented in the latter way on the children's papers though the teacher might find one set of cuts in an old book. The picture story is planned with special reference to the ease with which the objects may be cut or procured. "Cigaretts" may be cut as single ones or represented by a cigar box; "food" by a banana or apple, an egg and a glass of milk; "sleep" by a bed in which a child is resting, or by a face with the eyes closed; "ball" by a ball and a bat; and "crooked" and "straight" by crooked and straight lines.

PICTURE STORY

The (boy) who smoked (cigaretts) did not enjoy his (food) so much.

The (cigaretts) harmed his (lungs) and his (heart).

He did not (sleep) so well.

He could not play (ball) very well.

He found it hard to learn from his (books).

He told (crooked) stories instead of (straight) ones.

Sandow's Message to Boys

IF I had to speak to an audience of boys I should say, "If you only realized what you are bringing upon yourselves, and what will be the result of this smoking during your young days and in after life you would give it up at once.

It is really a question of what you would wish to be. Do you prefer to be a stunted, emaciated specimen of humanity, whom every healthy person looks down upon with pity, or do you wish to be pointed out by passers-by as a finely-set-up, healthy man, whom everyone of these aforesaid stunted specimens looks up to with envy?

If a man met you in the street and offered you some poison you would think he was mad, would you not? You would refuse to take it, of course, and yet if a man offers you a cigarette, and you accept it, you are doing just the same thing as if you accepted the poison. By smoking you are slowly but surely poisoning the system and sapping the energy which you should reserve for the duties of life.

Do not abuse the body which God has given. But that is what you will do if you smoke. Throw away the noisome cigaret, and acquire habits that will make you a healthy and vigorous man!"—English *Bant of Hope Chronicle*.

The Blood and Circulation

FOR ADVANCED GRADES

Purpose—(1) To show the wonders of this vital mechanism and the means by which it can be made more effective.

(2) To show how headache mixtures and nicotine impair this system, and so, health.

(3) To correct the fallacious idea that alcohol is a valuable drug capable of giving strength in weakness or prolonged exertion; and to show the injurious effects it has upon the blood vessels and upon the blood and the protective mechanism abiding in it.

Lesson Materials: (1) Scheme, clippings, text book, and supplementary books and special articles on pages 3, 16, of this JOURNAL; (2) model of heart; (3) pictures and diagrams of blood cells, organs, disease germs, etc.; (4) slides showing blood cells and heart tissue; (5) if available, blood from slaughter house, part of which may be tested chemically, part defibrinated, and part coagulated to show serum and clot (note similarity to coagulation in milk), etc.—most textbooks give directions for these experiments; the heart of a calf or sheep, or even of a fowl, with short section of accompanying veins and arteries. Examine particularly valves of heart and veins, linings of all, stiffness of walls of arteries, and note toughness of fibre, etc.; (6) bulb syringe with tubing and different sized nozzles to show action of heart and blood vessels.

References: Human Physiology (Ritchie), The Body at Work (Gulick), Alcohol and the Human Body (Horsley and Sturge).

Lesson Suggestions. In presenting this topic, the article on page 3 including the section of the same on page 16 which is a remarkably clear presentation of the whole subject of the blood and circulation and the injurious effects of alcohol, may be read by the pupils and discussed, notes being taken of the important points; the teacher may read it or it may be used as a reservoir from which to draw abundant and authoritative illustrative material. Following this, the scheme given and the text-book may be used. Make points clear by use of available illustrations of disease germs, blood cells, etc., and by experiments.

Probably not all the points regarding alcohol and nicotine would be covered in any one presentation, but in view of the fact that alcohol and nicotine in headache mixtures are especially injurious to this system, and also on account of the wrong conception of their effects, it is important that a full treatment be given.

1. GENERAL FUNCTIONS OF THE CIRCULATORY SYSTEM

- To carry food, water, and oxygen to the cells.
- To remove wastes from the cells.
- To distribute heat and to regulate heat.

2. COMPOSITION OF BLOOD

- Corpuscles: red, white.
 - Size, shape, origin (Horsley says both sorts are produced in the bone marrow), function of each.
- Plasma. (When the plasma has exuded through the capillaries it is called lymph.)
 - Composition: water, nutritive substances, wastes, fibrinogen, blood complements.
 - Functions (bring out the important function of lymph as well as of the plasma in the blood vessels).

3. ORGANS OF CIRCULATION

- Heart, arteries, capillaries, veins and lymphatics.
- Location, size, shape, structure, functions of each.

4. CIRCULATION IN DETAIL

- Lesser and greater circulations. (Trace blood through entire circuit by means of chart or simple blackboard drawing.)

5. CONTROL OF THE HEART

- Vagus nerves (the reins); (b) sympathetic nerves (the whip).
- Origin and influence of each.

6. CONTROL OF ARTERIES AND TISSUE SUPPLY

- Vessel constrictors or vasoconstrictors.
- Vessel dilators or vasodilators.

7. HYGIENE OF THE CIRCULATION

- General helps.** Plenty of oxygen and sufficient sleep during which the heart may rest and the supply of red corpuscles be recruited. Deep breathing helps the lymph circulation in the trunk. Fresh air on the skin, and the cool bath or rub-down stimulate the surface capillaries. (The latter affects surface capillaries and their walls relax. The inrush of blood reacts on all the contributing arteries and a readjustment of many vessels takes place rousing them from their inert condition.)
- Exercise.** Have each child count his pulse when sitting quietly, again after moderate gymnastics, and then just after recess or strenuous gymnastics, making note of the rate in each case. How long does it ordi-

narily take for the blood to make the complete circuit? What is evidently the effect of exercise? Which carries off the more waste and affects the banks the more, the swift or the sluggish stream of water? If the blood goes with more force and speed all through the system, what would be the effect on the various tissues?

Of what tissue is the heart composed? What is the effect upon any muscle of wisely exercising it? What, then, would be the effect upon the heart of proper general exercise? Show that by causing the heart to contract oftener and more vigorously it so exercises it that it is strengthened. Ask the children to contract the arm strongly and feel of it. What is the feeling? What probable effect of this strong contraction upon the veins and lymph tubes imbedded in the muscles? How could this help the circulation and the heart? Note that exercise is particularly important to the lymph circulation, because having no special propelling organ like the heart, it depends largely upon muscle contraction for its movement. Exercise and particularly massage often rests one greatly because the fatigue poisons which are in the lymph and are but slowly being thrown off on account of the sluggish circulation of the lymph and blood are immediately cared for when the circulation is hastened.

On the other hand, point out the dangers of excessive or unusually severe exercise, particularly upon the heart of the adolescent already worked nearly to its limit, and upon that of the aged, the muscles of whose hearts and blood vessels have somewhat lost their power of elasticity and hence of sudden adjustment to unusual conditions.

- c. *Happiness*. Point out that a feeling of well-being and happiness tends to increase the size of the blood vessels and by decreasing the friction helps the heart; worry constricts them and the muscles of the chest. This gives the feeling of a load on the heart and increases the work of the heart, and by hindering the circulation decreases the nutrition of the cells and the power of the blood to remove wastes.

8. SUBSTANCES HARMFUL TO GOOD CIRCULATION

- a. Water containing an *excess of earthy or mineral matters*. Point out the advantage of drinking rain or distilled water, especially for the middle-aged and old, because lime and the like tend to make the "pipe stem" blood vessels.
- b. *Headache mixtures*, nearly all of which contain acetanilid or similar coal tar derivatives. Explain that it is by powerfully depressing the heart that the pain is eased, hence the danger of overdoses which may cause acute and even fatal poisoning, or of chronic cardiac weakness due to continued use. (For full discussion of this subject, see page 123 "Follies and Dangers of Using Nos-trums," *Journal*, April, 1910).
- c. *Nicotine*. (See also Anti-narcotic Number of *Journal*, May, 1910).

1. Smoking by frequently raising the blood pressure (by vasoconstriction) tends to produce arterial disease. (Experiments of W. Emerson Lee in Pharmacological Laboratory, Cambridge, Eng.).

2. Prolonged use of tobacco very frequently produces "functional disturbance of the heart, characterized by feeble, irregular, intermittent pulse and a tendency to palpitation. Sometimes attacks of heart pain simulating the breast-pangs of angina pectoris occur." (Harrington Sainsbury, M. D., Consulting Physician to City of London Hospital for Disease of the Chest, etc.). (Note that cigaret users often have weak hearts and are usually unable to go into athletics.)

9. NATURE AND EFFECTS OF ALCOHOL

- a. Not a stimulant but *an irritant narcotic*—a depressant.

9. *Reflex effects* before absorption.

1. Transitory effects due largely to irritation of mouth, throat and stomach.

c. *Specific effects* after absorption.

1. Effects on the heart: (x) cardiac pump crippled and force diminished" by acute poisoning: (y) fatty infiltration and dilation caused by chronic drinking especially when large amounts of beer are consumed.

2. In therapeutic doses tends to lower blood pressure.

3. Habitual use of alcohol tends to "initiate and precipitate" the brittle or the softened conditions of the blood vessels usually due to old age.

4. Alcohol injures the functional activity of the blood: (x) by impairing the oxygen-carrying power of the red corpuscles; (y) by numbing the leucocytes so that they are less able to destroy disease germs: (z) by lowering the germicidal properties of the plasma.

The Circulatory System

BY JOHN HAY, M. D., M. R. C. P., ENGLAND

THE HEART is a hollow muscle containing certain valves. With each beat the muscle fibres harden and shorten, and the walls press on the contained blood, forcing it into the large blood vessels, leading from the heart. Between each beat there is a resting time during which the heart muscle remains placid. It is during these periods of rest that the heart recovers itself and prepares for its next beat. The heart must continue beating regularly; it is impossible for it to cease for more than a very brief time without endangering the life of the individual.

It must, therefore, at very short intervals, alternate its period of activity with periods of quiescence. The blood actually in the chambers of the heart has very little to do with the nourishment of the heart itself; this is nourished by blood conveyed to it in small vessels lying in the muscular walls of the heart. The blood flowing through these small vessels supplies the muscle fibres with the necessary oxygen and foodstuff, and takes up from the muscle fibres of the heart the waste products—the detritus—which result from the activity of the muscle, and which would poison it if allowed to accumulate. This interchange takes place chiefly during the resting periods.

The blood which is expelled from the heart with each contraction is poured into the arteries. These tubes have elastic and muscular walls, and exert pressure on their contents; in this way the intermittent action of the heart is transformed into a continuous force, and the blood pours steadily through the vessel. This force is needed to overcome the resistance to the passage onward of the blood met with in the smaller vessels and capillaries. By such means the blood pressure is maintained at the level required for a healthy condition of life. High blood pressure adds greatly to the work of the heart, low blood pressure indicates a feeble and defective circulation.

Regulating the frequency of the heart beat are certain groups of nerve cells in the central nervous system. These nervous centres can make the heart beat faster or slower as occasion demands by sending messages down to the heart through the nerves.

There is another group of nerve cells in the central nervous system which control the small arteries all over the body. From this group of nerve cells impulses are constantly passing down to the muscle fibres in these small vessels, and it is the contraction of these muscle fibres which prevent them from dilating.

The heart is, therefore, an intermittent pump forcing the blood into the arteries under pressure. The blood flows along the arteries, floods the meshwork of fine hair-like tubes, called capillaries, where it comes into intimate relationship with the tissue cells.

The rate of the flow from the arteries into the capillaries depends on the calibre of the smallest arteries, and this is influenced by the contraction of their muscular walls as described above. Finally, the blood returns to the heart through the veins and is there purified and cleansed in the lungs.—*British Alliance News*.

Causes of Consumption

THE French Permanent Committee on Tuberculosis at a meeting held June 11th, 1910, listened to a report by M. Lancereaux, who had studied 2,192 hospital cases of tuberculosis. His classification of the causes was as follows:

Alcoholism,	1229
Insufficient air and sedentary life,	651
Privation,	82
Misery,	91
Probable hereditary,	93
Contagion,	48

More than half of the tuberculous cases were alcoholics of long standing.

Inquiry was made as to the kind of drinks used, and they were found to be:

Liquors and essences	259 cases
Essences and alcohol,	254 cases
Alcohol alone,	91 cases
Alcohol and wine,	83 cases
Wine,	144 cases
Mixtures (alc. ess. wine.),	388 cases

Particular

A small boy was offering angleworms for sale. One fisherman in examining them, remarked that they looked rather small. "What do you expect for ten cents?" scornfully retorted the boy, "Sea-serpents?"

Regular Price, \$.60 Annually.

Special Offer Until Nov. 1, 1910, \$.40.

Just Two Minutes of Your Time

Times have changed: Where you were one of a few who saw the importance of telling people what alcoholic drinks are and do, a great many people are now becoming interested in scientific facts. The world has moved on wonderfully in the past ten years.

Have you kept up with it? You're still interested. But do you have the up-to-date facts—new ones every month? Do your friends have them? Can you supply them to your friends who are interested? How do you interest those who are not?

How about that minister of yours, that public school teacher or Sunday school teacher who already are in position to influence dozens or may be hundreds of young people?

How about that young man next door, or the young woman near by who is developing qualities of leadership? Are they having these scientific facts for their own inspiration and for helping others?

Now the JOURNAL has not only kept up-to-date, but a little ahead. For one thing it has changed its name, and is now the SCIENTIFIC TEMPERANCE JOURNAL. For another thing, its helps and suggestions for teachers are better than ever before. Do you realize how much teachers need these facts and helps. Whatever else we do or leave undone, the teaching of the children the truth about alcoholic drinks is of first importance. You can not afford to neglect any aid to that end, for the teachers hold the key to the situation and the JOURNAL helps turn it.

Then, the pages of the JOURNAL are packed full every month of readable, up-to-date, carefully stated facts about alcoholic drinks gathered from scientists and scientific papers all over the world, that you want to know and that you want all these other people to know.

An International Sunday School worker wrote us the other day in renewing a personal subscription: "Send me just as many copies of the SCIENTIFIC TEMPERANCE JOURNAL for May, 1910—the Anti-Narcotic number—as you can. That issue is one of the best collections of convincing facts on the narcotic question that I have ever seen. I am most grateful for it, and shall be glad to place the copies you send where they will do good."

You simply can't afford to be without it. Now we'll prove it to you.

The JOURNAL comes every month for ten months in the year. Often enough as you don't forget about it between times, but look for it and wonder what fresh news or facts or valuable ideas it is going to bring you next.

All this for only \$.60 a year.

But we are going to make you an even better special offer than that if you will take up with it right away. Just read a little farther.

Does your local temperance work need a little tonic? Give it a little dose of a six-months-for-\$.25 trial subscriptions, or only \$.40 for a whole year.

The best temperance work is done by those who are in closest touch with these facts. There is no way to keep in touch with them in fullest degree except through the JOURNAL because this is the only temperance monthly that is making a specialty of these facts.

Don't delay a single minute. Fill out this little blank and send it right in before you forget it, so that your subscription can begin with the very next number. Remit by stamps, currency or money order at our risk. We expect to hear from you.

*Scientific Temperance Journal,
23 Trull St., Boston, Mass.*

Enclosed find _____ for which please send _____ subscriptions to the Scientific Temperance Journal for _____ at the special prices (good only until November 1, 1910) of \$.40 for one year; six-months' trial subscriptions \$.25 each.

Name _____

Address _____

RIGHT LIVING

is the serious thought of the public and the press to-day. One of the most important demands on this thought is the maintenance of better health conditions in the schools.

The Gulick Hygiene Series

brings before the child the simple vital truths of health. The theme of the series is hygiene, and throughout it substitutes the principles of good health for the blind technicalities of anatomy which have made the study uninteresting and ineffective. *The Gulick Hygiene Series* adds a wholly fresh and scientific stimulus to the teaching of hygiene and physiology, and sets a high standard for future textbooks on this subject.

GINN AND COMPANY

Publishers

29 BEACON ST., : BOSTON, MASS.

THE SUFFOLK ENGRAVING AND ELECTROTYPING CO.

ILLUSTRATORS ENGRAVERS
ELECTROTYPERS

394 Atlantic Avenue, Boston, Mass.

Cigaret Stereopticon Slides

Doors closed to the Cigaret user.	Plain
Handwriting of Cigaret users.	Plain
Tobacco and Scholarship.	Colored Diagram
Tobacco and Development.	Colored Diagram

Plain \$.40 each, postage \$.05
Colored \$1.00 each, postage \$.05

SCIENTIFIC TEMPERANCE FEDERATION

23 Trull Street, Boston, Mass.

A New Method!

Travelling Loan Exhibit

—Of—
ATTRACTIVE DIAGRAMS

Showing

Scientific Facts about Alcohol

WHAT IS IT?

Exhibit consists of 25 Colored Charts (framed or not as desired, size 22x28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other infectious Diseases, Longevity, etc. No objectionable details. Based on most reliable scientific experiments. Excellent for No-License Campaigns.

WHO USE IT?

General Expositions
Teachers' Institutes
Charitable Organizations
Christian Endeavor Conventions
Sunday School Associations
Temperance Lecturers and Conventions
Physicians, Ministers
200,000 persons have seen these charts in two years.

HAVE YOU HAD THEM?

Send for Full Information as to Expense and Plan for Use.

Scientific Temperance Federation

23 Trull Street, . . . Boston, Massachusetts

Good Recent Books

—ON—

The Alcohol Question

Scientific

ALCOHOL AND THE INDIVIDUAL

By Henry Smith Williams, M. D., L. L. D.

A reprint of the valuable articles in McClure's with extracts from the article by Dr. Rosanoff. Postpaid \$.55

ALCOHOL AND THE HUMAN BODY

By Sir Victor Horsley and Dr. Mary Sturge

Indispensable to the person who wishes to be really well informed on the modern scientific facts about alcohol. Scientific, but not technical. 379 pp. Postpaid \$.96

ALCOHOL A DANGEROUS MEDICINE

By Mrs. Martha M. Allen

A new edition showing the progress made by physicians in limiting or abandoning the medical use of alcohol, with the reasons. Postpaid . . . \$1.25

General

THE BIBLE AND WINE

By Ferrar Fenton, M. R., A. S., M. C. A. A.

A new study and translation of Texts Referring to Wine and Strong Drink. A suggestive treatment of the subject for all interested in that phase of the question. 150 pp. Postpaid . . . \$1.15

Scientific Temperance Journal

23 Trull Street, Boston, Massachusetts

4461.30 392

SCIENTIFIC TEMPERANCE JOURNAL

— *Continuing the* —
SCHOOL PHYSIOLOGY JOURNAL

Wastage from Drink as a Factor in the Increased Cost of Living
Which is Cause and Which is Consequence?

The Social Viewpoint

Moral or Scientific Temperance Instruction

Class Helps

Anti-Cigaret Methods

Alcohol and Length of Life

Physiology in the High School

Published at -
BOSTON, MASS.

OCTOBER, 1910

New Century Series

—OF—

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fulness and accuracy of the treatment in regard to the nature and effects of alcoholic drinks and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

World's Temperance Sunday, Nov. 27, 1910

LITERATURE FOR PREPARING LESSONS

and for

SUNDAY SCHOOL PUPILS

	per 100
Causes of Alcoholism,	\$.15
Facts About Alcohol,	.15
Drink and the Doctor's Bill,	.15
Alcohol and the Death-Rate,	.15
Sinning Against the Unborn,	.15
Alcohol and Degeneration (Colored Chart),	.65
Tuberculosis and Alcoholism,	.35

WINE AND BEER LEAFLETS

False Claims for Wine,	.35
Wine to Drive Out Drunkenness,	.30
Wine a Peril to Childhood,	.30
Alcoholism in Wine-Drinking Countries,	.30
Dangers in the Use of Beer,	2.50
Plain Facts about Beer,	.40

Scientific Temperance Journal

23 TRULL STREET, BOSTON, MASS.

Publication Department

Alcohol and the Human Body

(Revised Edition)

By Sir Victor Horsley and Mary Sturge, M. D.

How does alcohol affect the body processes, organs, and intellectual work; cause crime and insanity; lower the power of the body to resist diseases; injure the child and imperil the race, etc.? These questions answered simply but scientifically and interestingly. 370 pp.; 16 beautiful plates; 21 diagrams.

Price postpaid \$.96.

Psychology of Alcoholism

By George B. Cutten, B. D., M. A., Ph. D.

A popular summary of research (750 references) on effects of alcohol on nervous system, intellect, will, emotions, senses, insanity, and of cures by hypnotism and conversion.

Price postpaid \$1.65.

The Saloon Problem

By Prof. John M. Barker, Ph. D.

Has chapters dealing with the economic, political, social and criminal aspects of the liquor problem; legislation, education, law enforcement and successful methods of work.

Price postpaid \$1.10.

Alcohol and the Individual

By Henry Smith Williams, M. D., LL. D.

The valuable articles published in **McClure's** on the relation of alcohol to individual well-being and efficiency, with extracts from article of the Doctors Rosanoff, in attractive book form. Every temperance organization, minister and teacher should secure a copy and use it.

Price postpaid \$.55.

Alcohol a Dangerous and Unnecessary Medicine

By Mrs. Martha M. Allen.

A helpful compendium of information as to the dangers of alcohol, the reasons why physicians are lessening or abolishing its use in medicine; substitutes which may be used in its place.

Price postpaid \$1.25.

COMBINATION OFFER TO NEW SUBSCRIBERS

Alcohol and the Human Body	\$.96	ONLY	Alcohol and the Individual	\$.55	ONLY
Scientific Temperance Journal	.60	\$1.45	Scientific Temperance Journal	.60	\$1.00
Psychology of Alcoholism	\$1.80	ONLY	Alcohol, a Dangerous Medicine	\$1.25	ONLY
Scientific Temperance Journal	.60	\$1.85	Scientific Temperance Journal	.60	\$1.35
The Saloon Problem	\$1.10	ONLY	Five Books and		ONLY
Scientific Temperance Journal	.60	\$1.50	Scientific Temperance Journal, one year		\$5.00
SCIENTIFIC TEMPERANCE JOURNAL, - - 23 Trull Street, Boston, Mass.					

Please mention the Scientific Temperance Journal when writing to advertisers.

Scientific Temperance Journal

Vol. XX

BOSTON, OCTOBER, 1910

No. 2

Opportunity

Thrice fortunate are you to whom it is given to lead lives of resolute endeavor for the achievement of lofty ideals, and, furthermore, to instill both by your lives and by your teachings, these ideals into the minds of those who in the next generation will, as the men and women of that generation, determine the position which this nation is to hold in the history of mankind.

The chance to do good work is the greatest chance that can come to any man or any woman in our generation. If such work can be well done it is in itself the amplest reward and the amplest prize.

—Theodore Roosevelt.

Wastage from Drink as a Factor in the Increased Cost of Living

The Massachusetts Commission on the Cost of Living was created by the legislature in 1910 to investigate thoroughly the cost of living in that state, and to inquire into the causes of the increased prices of the necessities of life. The members of the Commission were chosen with a view to their special knowledge of law, labor, trade and political economy. The following article is from the portions of the Commissioners' report dealing with waste as a factor in increasing the cost of living.

THE causes that have brought about the recent advance of prices fall into two main groups: First, increase of uneconomic expenditures through waste, destruction, and general extravagance; second, increase of economic expenditures, brought about by rise in prices.

The chief items in the increase of uneconomic expenditures are enlarged outlay for war and national armaments, higher scale of governmental expenditure in general, and cost of the burden of crime, pauperism, insanity, accident, disease, unemployment and other forms of social wastage. These are all items of public and social expenditure. Meanwhile, also, individual expenditure of an uneconomic character has increased, including outlay for drink, luxury, amusement and wasteful or injurious forms of consumption.

THE BURDEN OF THE UNPRODUCTIVES

As long as the efficient members of every state must carry the inefficient on their backs, as long as the productive members of society are compelled to support the unproductive, living must continue to cost more than it should.

It has long been known that the immoderate use of alcoholic liquor is a menace to the happiness and an injury to the welfare of those peoples among whom it is prevalent, but not until the science of statistics was applied to the problem was the magnitude of its economic importance appreciated. Of late we have come to know that by sapping vitality, by bringing accident, disease, and death,

it causes economic waste of enormous proportions.

The total cost, direct and indirect, of the liquor traffic of Massachusetts is beyond the power of man to compute. How much of the \$19,000,000 annually spent in this state for public and private support of the dependent classes [penal institutions \$1,829,000; pauperism and charity \$14,500,000; insanity \$2,640,000] is to be attributed to this cause can not be ascertained, but it is a very large percentage, and huge as the amount is, it is as nothing compared to the indirect cost. The problems of drink, poverty, unemployment, crime, mental and physical unfitness are so interwoven that it is practically impossible to separate them. Drink in all its combinations adds to every trouble of life, and but for it the problems of sickness and old age could be met much more easily. The tremendous waste due to intemperance constitutes a burden that falls most heavily on those least able to bear it.

A WASTE CUTTING BOTH WAYS

Massachusetts was a pioneer in scientific investigation of this phase of the question. In 1895, the Bureau of Statistics of Labor published the results of an exhaustive study of the relation of the liquor traffic to pauperism, crime, and insanity. In the matter of pauperism it found that out of 3,230 paupers in the state institutions about 65 in every 100 were addicted to the use of liquor, and that about 16 in every 100 of all the paupers were immoderate drinkers; about 39 in every 100

attributed their pauperism to their own intemperate habits; about 5 in every 100 considered their pauperism due to the intemperance of their parents, one or both; and about 1 in every 100 attributed their pauperism to the intemperance of those upon whom they were dependent, other than parents. This made 45 per cent. of the total who attributed their pauperism to the intemperance of themselves or of others.

This would indicate little progress since 1821, when a special committee of the town of Boston, created to consider the subject of "pauperism at large," and headed by Josiah Quincy, reported to the Legislature, as the result of the experience of both England and Massachusetts, "that of all causes of pauperism, intemperance in the use of spirituous liquors is the most powerful and universal."

In the matter of crime, the Bureau of Statistics of Labor found that about 68 in every 100 included drunkenness, either wholly or in part; and that in the case of about 84 in every 100 of all convictions the intemperate habits of the offender led to a condition which induced the crime. In 8,440 cases in which the offender was convicted of a crime other than drunkenness, about 43 in every 100, were cases in which the offender was under the influence of liquor at the time the offence was committed. Nearly 51 in every 100 of the crimes other than drunkenness were committed under conditions created by the intemperate habits of the criminal.

The Massachusetts Bureau found, upon investigation of the insane in public institutions, that of 897 cases where the facts could be determined, there were 616, or about 69 in every 100, in which one or both parents were intemperate; and that of 1,506 cases there were 383, or about 25 in every 100, in which the intemperate habits of the person were considered the cause of insanity.

The economic effect of all this shows itself in two directions: first, in the expense entailed on the community in costs of government and charity; and second, in the injury to the productive efficiency of the community.

In the matter of direct expenditure, the recent special report of the trustees of the Foxborough State Hospital put the annual cost of drunkenness to the citizens of the state at a point far beyond \$1,000,000.

As a matter of fact, if drink were to be held responsible for a proportion of the public payments—state, county, city, and town,—for penal institutions, police departments, the judiciary, asylums, poorhouses, etc., as well as of private charity, corresponding to the proportion that liquor bears to other causes of conviction and commitment, the

grand total of expense in Massachusetts would be found not far from \$10,000,000 a year; and if to this we added the cost in disease and death, the total record would be appalling.

The individual wastage through its use is of course beyond measurement, but is surely enormous.

ONE DEATH IN SIX DUE TO DRINK

The economic waste of human life is also to be considered. Actuaries have determined that in the case of several English insurance companies, with statistics of more than forty years, non-abstainers have a death-rate exceeding that of abstainers by 23 per cent. Certain authorities have asserted that in alcohol-using countries 10 per cent. of all deaths are directly or indirectly caused by the use of liquor. In order to ascertain the approximate percentage of such deaths in this state, we addressed a circular letter of inquiry to Massachusetts medical examiners. The replies indicated an average of 16 per cent. in the case of 21 districts.

The cases of death that come under the purview of medical examiners are as a rule those resulting from crime, accident, or sudden and unaccountable causes; the crimes attributable to alcohol are usually those of violence, since alcoholism in some produces insane tendencies to violence, and in many a mental stupidity or idiocy that destroys or dulls the instincts which make for self-preservation and avoidance of danger. The judgment of regular practitioners and the records of hospitals would doubtless give a more accurate knowledge for guidance, but these could not be obtained in the time at the disposal of the commission.

CHANGES IN DRINKING CUSTOMS

The use of alcoholic beverages in this country has rapidly increased. That of distilled spirits remains about stationary, the average retained here for consumption having been 1.45 gallons per capita in the years 1871-78, and the same in the years 1901-08; but the average for malt liquors in the same periods rose from 6.72 gallons a year to 18.88 gallons. In 1908 it was 20.97 gallons.

Observation leads us to believe that there has been in Massachusetts a material diminution of public drinking by the well-to-do in the last generation, with less use of wine at banquets, of punch at college reunions, less resort by business men to public bars, less consumption of hard liquors in clubs. But the statistics indicate that there must have been great increase in the use of malt liquors in homes, and of resort to saloons by wage-

NECESSITY OF LEGISLATIVE PROGRESS

With the spread of education and the general progress of society, there ought to be a lessening of the evils produced from such a cause as this. We are not of the belief that the primary cure is to be found in legislation. . . . The most important thing is to elevate the standards of the community, for its moral sense is the most powerful of all agencies. But the strong arm of the law often has to be called upon to enforce the common will. If it be the case in the course of a generation and more of universal schooling, of intellectual advance and moral growth, we have so progressed that public sentiment will support a more rigid application of its views on the liquor question, legislation should keep pace therewith. In a generation our laws have made no important advance in this matter. It may well be considered whether we have not reached the point where the more conspicuous of the evils may be suppressed, perhaps by abolishing that institution peculiar to America, the source of our greatest economic in-

jury and private misery, the resort where liquor may be sold without a genuine use of food, the saloon.

We heartily indorse the proposals of the trustees of the Foxboro State Hospital for more scientific and effective treatment of dipsomania, and we believe that their adoption would mark a long step toward the treatment of inebriety as a disease and not as a crime.

That alcoholism is a monstrous evil, is beyond question; but it is a mere evasion of our humanitarian responsibilities to assert that the majority of our criminal evils spring from alcoholism. Crime and sin are coeval with humanity; they exist in communities where alcoholism is practically unknown; and while crime and social weakness must always be aggravated by the waste incidental to alcoholism, the important thing is to learn the basic causes of alcoholism. When we learn them and can remove or remedy them, while we may not cure crime, we shall at least eliminate many of the conditions that fertilize the soil of lawlessness.

Which is Cause and Which is Consequence

BY E. L. TRANSEAU

THE old dispute as to whether the hen preceded the egg or the egg the hen, is paralleled today in the numerous attempts to find a prophylactic for alcoholism.

The necessity of knowing the cause, or causes, in order to prevent the universally acknowledged evil has led to much speculation as well as to much earnest study from various standpoints. Some have accounted as causes influences which further inquiry shows to be effects. A recent school textbook on hygiene, for instance, asserts that "poverty is almost exclusively the cause of alcoholism", an assertion that is out of harmony with experience in hard times when poverty increases, for then the consumption of alcohol tends to decrease.

The late Dr. Norman Kerr, an English specialist in inebriety, who sometimes had more than 1,500 cases under his care at a time, has furnished figures and evidence on this point. He said that a large proportion of those treated in inebriate homes were in comfortable circumstances, that wealth seemed to be a predisposing influence because of its opportunities and purchasing power. Many destitute inebriates also applied for treatment in the homes, but the majority of these had fallen into inebriety when they were in easy or wealthy circumstances. They had squandered their means in drink and

their destitution was the result. Dr. Kerr's conclusion from his large experience was that in most instances intemperance is the cause and not the effect of poverty.

PHYSICAL OR MENTAL DEFECTIVENESS

Mental defectiveness is often given as a cause of inebriety without consideration of the cause of the defect. Dr. Kerr furnishes from his extended experience some valuable information on this point. He counts as among the most serious and saddening of the evil influences of alcohol "brain degeneration involving a delicate susceptibility to narcotic influences, neurosis allied to inebriety, and defective will-power" as well as the drink impulse itself.

He observed children born more than a year after the father began to suffer from brain disease or inebriety, who exhibited from their earliest years a propensity for intoxicating drink. In more than one family the children born before such attacks in the father showed no such inclination, while those born afterward showed so strong a tendency that "only by constant supervision could they be kept from strong drink as soon as they began to crawl".

Fully 50 per cent. of the inebriate patients in his own practice had inebriate parents, and this he considered an underesti-

mate because people are generally reluctant to give full information about this weakness in their relatives.

THE PERVERSION OF A UNIVERSAL DESIRE

The theory that alcohol satisfies a universal desire and that, therefore, its use must be normal to man is a frequent explanation of the prevalence of alcoholism. "Primitive man, and often the civilized man, takes to alcohol as naturally as a duck to water", says an English writer on the "Evolution of the Alcoholic".

This universality seems not to apply to women and children, except in cases of marked hereditary taint, in which instances it is an effect instead of a cause.

Some writers think that the universal desire springs not from a liking for alcohol itself, but for the "heightened state of consciousness" which it artificially creates. There may be some foundation for this view, but when we consider the manifold normal and beneficial ways in which the desire for a heightened state of consciousness can be satisfied we see what a stupendous blunder has been the suggestion to satisfy it with alcohol.

Every great poem, every masterpiece of music, painting, sculpture, architecture, arose from an exalted state of consciousness, reaching what in the case of the poet has been not inaptly termed "a fine frenzy". The inspiring motive of every great work of literature and invention has had its origin in a similar mental state, as have many humbler works resulting from worthy and well directed activity.

The enjoyment of a heightened state of consciousness may well be looked upon as a mainspring to man's advancement, but what a perversion to substitute for the normal impulse to such a state the influence of a drug which only simulates the effect for a few minutes and leaves the drinker robbed of the joy of worthy achievement!

CIVILIZATION'S DOUBLE

Another explanation of inebriety is that the use of alcohol is a necessary accompaniment, in fact, a mark of advancement in civilization, because forsooth, the most alcoholism is found in the most advanced nations. Civilization must, therefore be regarded as a cause of alcoholism!

The liquor interests go even further and assert that man's advance in civilization is a result of his use of alcohol.

But when we find that alcoholism is most common among the submerged classes, that it pulls the efficient down into the ranks of the inefficient, we must conclude that its use

is not one of the wheels of progress, but is instead a drag upon those wheels. Modern study shows also that it is not a necessary but a preventable drag.

EXCITING AND PREDISPOSING CAUSES

Besides the theoretical explanations which on close investigation seem to be effects rather than causes, there are several circumstances which undoubtedly exert much influence in starting individuals on the road to alcoholism. In the list named by Dr. Kerr are the following: Nerve shock, injury to the head and other parts, disease, maternity, occupational influence, climate, idleness, overwork, and overstrain, sociability, monotonous dullness, pecuniary and domestic trouble, insufficient diet, bad hygienic conditions, ill-health in which alcohol is taken to relieve disagreeable feelings of faintness, depression and the like, and the giving of alcohol to children which originates in them an abnormal craving for it.

Another specialist on inebriety, Dr. R. Welsh Branthwaite, His Majesty's Inspector under the Inebriates Act, England, has given a list of predisposing causes in what he considers the order of their importance. These are: (1) a neurotic heredity, especially of mental diseases; (2) epilepsy, or similar defect which has caused habitual drunkenness in forbears; (3) imperfect nutrition during fetal life, and the influence of alcohol drinking by the mother during pregnancy; (4) injury at birth; (5) the administration of alcohol during infancy; (6) falls, blows, or other injury, and bad feeding or general neglect during childhood; and (7) any shock, injury or disease during later life which affects the nervous organization injuriously, and thereby impairs vitality and resistance to impulses.

"Given these conditions or some of them, the exciting causes may practically be summed up in one word—environment."

ONE COMMON UNIVERSAL CAUSE

Dr. Brandthwaite's term "environment" contains the kernel of the whole bristling burr of causes—the custom common in nearly all classes of environment. A striking verification of the influence of environmental custom is afforded by the results of the inquiry reported by Geo. E. Partridge, in the *American Journal of Psychology* in 1900. He inquired of sixty-five victims of alcoholism confined in criminal and inebriate institutions where and when they began to drink. Only two had taken their first glass alone. It was while "out with the crowd" that they began and afterward continued the

drinking habit. Seventy per cent. began before the age of 21.

In the drinking customs is the ever-present suggestion on occasions most varied and diverse. But for the custom of using alcoholic liquors as beverages they would not be thought of as a means of forgetting misery, of celebrating a victory, of relieving depression, of enlivening social intercourse, of inviting sleep, and on all the other thousand and one occasions on which the suggestion to take alcohol presents itself.

THE OUTGROWTH OF PAGAN SUPERSTITION

When we attempt to trace the origin of the alcoholic custom we are carried back to the closed portals of pre-historic antiquity, from which intoxication emerges as an accompaniment of religious ceremonies. The god Indra of Hindu Soma worship was thought to be in wine, as was Dionysius of the later Greeks, and men worshipped the god by becoming intoxicated. To the superstitious imaginations of those times the strange behavior of the insane, the epileptic, the drunk-

en, was a manifestation of the supernatural, something to be revered and attained.

From those practises connected with religious rites the train of hereditary effects now familiar to students of alcoholism, easily followed. The origin of the epileptic, the insane, the mentally defective, who most strikingly "takes to alcohol as a duck to water", is there accounted for. Each succeeding age not only followed, sheep fashion, the practices of the preceding, but extended the list of occasions for indulgence in this source of mental illusion.

CONCENTRATE UPON THE CUSTOM

When all who deplore the evils of alcoholism are willing to unite upon the one aim of abolishing the custom of using alcoholic drinks as beverages, we shall begin to foresee the day when the wine-cup, the beer-mug and the decanter will appear as ill-befitting enlightened man as does now the silver mounted snuff-box from which our most dignified statesmen a hundred years ago punctuated the periods of their eloquence.

It is not enough that we close saloons—It is not enough that we teach men obedience to law. We must teach the childhood and the manhood of this nation the value of abstinence and sober living.
—*Ex-Governor Hanly.*

A Vanishing Treatment of Snake Bite

IT used to be considered an unanswerable argument against prohibiting the sale of intoxicants to inquire "What could we do without whisky for treating snake-bite?"

It was never so vital a question in the United States as appeared in the seriousness with which it was asked. But the joke of the rattlesnake of the community engaged a week ahead for the convenience of drinkers seeking an excuse has nearly served its day in the humorous column, as medical experience makes it pointless.

Dr. Prentiss Willson in a recent article in the *Journal of the American Medical Association* (Aug. 27, 1910), reviewing a series of 740 cases of snake bite poisoning found that of 99 cases due to the copperhead there were only five fatalities. Of the five, only one could properly be attributed to the direct activity of the venom. One was undoubtedly due to a septic infection to which the treatment of the injured predisposed. *In the remaining three cases, the alcoholic intoxication added to the venous intoxication undoubtedly contributed to the result.* Here is fresh evidence of the statement made by another physician some years ago to the effect

that death from snake-bite under whisky treatment was probably nearly as often due to the whisky as to the venom.

The modern treatment advised by Dr. Willson is similar to that described in an account in the *Lancet* (March 5, 1910), of a serious case of East Indian cobra bite treated without alcohol and followed by recovery.

The victim, a man in the employ of the East Indian Railway company, put two strong cord ligatures above the bite himself, and was taken to the hospital by his friends, two hours after the bite. A tourniquet was at once added to the cords. Deep incisions were made about the bite and free bleeding allowed for ten minutes, then the wound was washed with hot water and crystals of permanganate of potash were rubbed in. The tourniquet was taken off and the cords were loosened as the man could not endure the pain longer, but within half an hour he sank into unconsciousness, pulse very weak owing to absorption of poison not eliminated by the bleeding. No alcohol was given him but ether, strychnine, digitalis, etc., and he gradually regained consciousness and strength of pulse and recovered.

The Higher Moral Standpoint — Moderation or Abstinence

By L. LINDRUM, KIEL, GERMANY
Editor of Die Enthalttsamkeit

IN dealing with alcohol one can no more speak of "rational moderation" than he can speak of a justifiable use of opium, or morphine. Poison is poison even in the smallest doses. All standards of moderation in the use of alcohol must necessarily be based upon the dangerousness of the evil to the people. First: because it is impossible to determine what amount is generally uninjurious. Secondly: because the way to immoderation lies through "wise" moderation.

What then is the morally higher standpoint? That is moral which corresponds to good customs. A custom is good when it conduces to the advantage of the generality. It is bad when the generality suffer from the results of it. The greater the blessings a custom brings, the higher it stands morally. The more general happiness it destroys, the more immoral it is.

The alcohol custom brings 250,000 of the German people annually before the criminal courts; it costs us every year 50,000,000 marks [\$12,500,000] for the care of the poor; it drives 1,000 Germans annually to suicide, and as many to fatal accidents.

The alcohol custom forces 16,000 every year into hospitals; it is to blame yearly for at least 30,000 cases of insanity. It shortens life, prolongs illness, increases liability to infection, diminishes fitness for military service, causes degeneracy in the next generation and promotes the social disease. It is a source of want, poverty and misery of all kinds.

The alcohol custom is an immoral, an evil custom. Whoever gives support to such a custom is an accessory to its consequences. Whoever by his example opposes it, helps thereby to promote the welfare, health and domestic happiness of his fellowmen.

The verdict on the alcohol custom must therefore be: Not moderation but abstinence is the morally higher standpoint.

But does not battling against temptation strengthen character more than fleeing from it? One who defends alcohol on the grounds of moral gymnastics is like a trainer who would exercise his athlete with dynamite bombs. The battle of life provides plenty of opportunity for exercise in self-control. Alcohol is most unsuitable for the purpose because it is a stupefying poison which weakens the brain and benumbs the will.

So long as the present drink-compulsion prevails, to refuse an invitation to drink is a better means of strengthening character than to accept.

"Moderation", wrote Cicero, "is the unrestricted sway of reason over appetite and all wrong desires of the heart. It means abstinence from all things which are not good, whose nature is not wholly uninjurious."—Translated for the SCIENTIFIC TEMPERANCE JOURNAL.

Caveant Medici

By REV. ULRICH F. MUELLER, C. P. P. S.

IN a certain parish, a mission had been held with great success. A man who for years had lived the life of a drunkard was converted, took the pledge and received the sacrament for the first time in many years. For ten years he kept his pledge and became a model in his parish. Then he became sick. The physician—no doubt an old-timer—advised a little whiskey to "stimulate the appetite."

The man feared the return of his former passion, so went to the missionary who had given him the pledge and asked whether he should obey the advice of the physician. The good missionary knew all about the moral part of the drink question, but was, unhappily, rather ignorant as to the physiological effects of alcohol and also did not care to "correct a physician," so he advised, "You may obey your physician, but be on guard lest you contract again a strong liking for this poison."

The man went home, obeyed, but soon forgot the warning, became a drunkard again, dropped his church affiliations once more, and died soon after of delirium tremens.

The Greatest Crime Breeder

WHAT is the greatest source of crime? Is it poverty and misery? Is it unfavorable social conditions? Is it hereditary affliction? Is it defective education and training? These questions were presented and discussed by Dr. Pollitz, penal hospital superintendent of Dusseldorf, in a lecture on the psychology of crime, at a meeting of scientists in Tenbangen and afterwards published in a memoir. In it he says that the close relation existing between alcoholism and all kinds of crime has been much discussed since the alcohol question has received so much attention, and it is no longer seriously denied. He declared alcohol to be the most evident and most dangerous cause of crime as well as of much misery and evil, and closes by saying that the hopeful movement against alcohol offers the best prospect for the prevention of the crime.—*Hygienische Rundschau*, (Oct. 19, 1909).

"Hast thou kept honor, and sweet courtesy kept,
Then is no loss that may be wailed or wept."

The Social Viewpoint

The temperance movement is a reasonable attempt to recover for the Country the sources of its permanent wealth.—*Archbishop of York.*

Lowering the Capacity for Social Service

THE national crusade against alcoholism in Budapest is the title under which a special correspondent of the *Lancet* (1909), reported a meeting of the National Anti-Alcoholic committee. The presidential address was delivered by Count Andrassy, Minister of Internal Affairs in which he said: "Alcoholism is one of the greatest scourges of mankind. It undermines the resisting power of the body, which easily becomes a prey to bacilli and other poisonous agents. The soul loses its elasticity and easily becomes the prey to sin. Weak body and weak soul undermine hand-in-hand the worth and capacity for work of society. Instead of work, man likes entertainment and so the material well-being vanishes. It is, therefore, our duty to fight against this peril, a duty as well toward mankind as toward our nation."

CONSERVATION WORTH WHILE

THE United States Government is giving much attention to the problem of conservation—certainly a very wise thing to do. The policy is carried out with reference to other national resources. But how is it with human life and energy? True, the expectancy of life has been increased. Much of this has come through the enactment of pure food laws and the control of contagious disease by boards of health.

This life saving and life lengthening process has been largely effective with children. But let us look a little further. After the individual has been saved from disease and death in early childhood, what happens to him later on in life?

We offer thousands of dollars for a remedy for hog cholera. We make laws to compel men to destroy the Canada thistle and other noxious weeds. We spray for the San Jose scale and make the nursery man certify that the trees he sells are without disease. We make the groceryman sell pure sugar and flour and butter and lard and call things by their right names. If tobacco is poison, why not label it as other poisons? If it is not a poison, let us quit teaching that it is a poison. If tobacco and cigarets dwarf the physical development of the child, arrest brain growth and mind development, why not stop the sale of them? Is not human energy, muscular and mental, worth conserving? Are we going to

save the streams and coal beds and fruit trees and the hogs and let the boys go? Are human life and soul energy worth saving? If they are worth saving, are we too cowardly or ignorant to take measures to do it? We talk about pure air and devices for ventilation and yet it is almost impossible to get away from air that is not polluted by tobacco or cigarets.

If we had upon our statute books laws that permitted men to sell something that poisoned the pigs, calves and chickens, and interfered with their complete development as perfect animals, especially while the prices are so high, would there not be something doing? How about the boys?—*Teacher's Journal.*

Notes from the Report of the Massachusetts Commission on the Cost of Living

Industrial Efficiency would be promoted, one manufacturer suggested, by "putting a stop to the manufacturing and sale of intoxicating liquors which is doing more to undermine the health and decrease the efficiency of the employed as a class than any other cause."

Fatigue and Alcohol. The workman seeks to deaden his fatigue by alcohol, tobacco, exciting amusements and excesses of various kinds. The momentary relief which he thereby obtains is purchased at the expense of an increasing susceptibility to fatigue, resulting sooner or later in complete depletion of his vital energies and in the contraction of tuberculosis or other fatal disease.

The Economy of Prevention. To spend money lavishly on hospitals, insane asylums, jails and reformatories is well, but better still would be a public desire to go behind the pauper, criminal and diseased in mind and body, seek the causes that made them thus inefficient units, and to apply the prevention, if it is in the public power, as it has been demonstrated, largely to do.

Public opinion is the motive of democratic institutions. When it is sound and wholesome, social evils go down before it, as the snow disappears under the May-day sun. All that is needed for the formation of a sound public opinion is that the great majority of the people should have clear ideas on subjects of public concernment and should freely express them.—WASHINGTON GLADDEN.

Scientific Temperance Journal

Founded by Mary H. Hunt

Single Subscription.....\$0.50 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 27 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered as second class matter June 1, 1909, at the postoffice at Boston, Mass., under the Act of March 3, 1879.

"It takes a soul

To move a body. It takes a high-souled man

To move the masses even to a cleaner strife.

It takes the ideal to blow an inch inside

The dust of the actual."

For the Sake of the Girls

ATTENTION has recently been directed in these columns to the especial perils of alcoholic beverages to women. Indulgence often begins in subtle form, perhaps in medical use, possibly in the tiny social glass, or often, in the humbler ranks of life, in consequence of the habits of the husband.

Whatever the occasion, the risk can not be too strongly urged, and girls, especially when they leave home for boarding school and college should know definitely what they must avoid and why. A college graduate, herself a college instructor, asked not long ago whether there is alcohol in benedictine, saying that after a walk a short time before with one of the undergraduates, the latter had urged her to "come in and have some benedictine, as it will make you feel fine." Not quite sure of the facts, but quite unwilling to venture influence on uncertainty, the older woman declined and then proceeded to get at the facts which were, of course, that the drink in question has on the average an alcoholic content of 38 per cent.

Even the soda fountain is not free from possible influence with its "frozen pudding", "claret sauce", and sundry other wine or liquor flavored delicacies. Undoubtedly it is true that the majority of women who buy them would not scruple to place them on their own tables, yet there are many to whom this would be a special "treat" and who thus become accustomed to the alcoholic flavor. The quantity which these delicacies contain is

small, yet any habit which will accustom women, and especially girls and young women, to purchasing over the counter alcoholic preparations has in it grave risks which need to be more widely appreciated and guarded against by mothers, teachers, and all who have to do with the training of girls.

The Vanguard of Civilization

IT is stated on United States official authority that an American brewing firm has been incorporated under the laws of Arizona to establish a brewing business in Mexico. One would think that Mexico, like any other nation, had domestic troubles enough without the complicating addition of a foreign beer industry which the Report states expects to make a net profit of \$12 a barrel on keg beer and a higher profit on the bottled beer. As the present consumption of beer at the point where the brewery is to be established is from 16 to 20 barrels daily, it will be seen that a neat little profit of about \$87,000 annually may be looked for.

There are no philanthropic motives ascribed to the industry thus to be established, but a current bill-board advertisement in grandiloquent phrase informs the passers-by that a certain beer is "the vanguard of civilization".

Judged by that claim, can it be that the new brewery venture really expects by increasing the use of beer to contribute to Mexico those qualities which Guizot enumerates as the characteristics of civilization? Beer as the "vanguard of civilization" to aid Mexico in "advance in arts and learning" to "promote order", to "elevate and social and individual life", to "develop human faculties", to "increase the production of the means of strength and happiness"! *C'est a rire*—were it not too serious a matter.

Mexico will need to redouble her efforts for the temperance training of youth, while every patriotic American should feel a shame that American capital and American plans are to invade with American beer the house of our sister of the South. Is this the "consideration", action "in accordance with justice, right, and honor" that Hon. Curtis Guild, Special Ambassador from the United States to the recent Mexican Centennial celebration outlined as the ideal of the new day of international relations, and especially the ideal of the United States?

WHILE the progress of Mexico is thus threatened by American beer, Germany is recognizing that beer, so far from being the "vanguard of civilization" is its handicap.

At a meeting of the Diet at Karlsruhe, not long ago, according to the *International Monatschrift*, a social democratic representative found fault because in the stone quarry at Dossenheim the workmen had been deprived of beer, although with the consent of their committee. He did not understand how any one could expect men to endure the heat of the sun and do their work with only tea and coffee to drink.

Thereupon, the Minister of the Interior replied that the widespread belief in beer as a source of nourishment and strength is an error fatal to the welfare of people in all circumstances.

Beer, he told them, is a luxury, and workmen should look upon it as such and act accordingly. That people engaged in the most difficult labor could perform it best when abstaining from alcohol entirely, he said, was a fact so well known that he did not need to enter into it. Furthermore, he regarded it his duty to take this public stand upon a matter of such importance as the alcohol question.

ANOTHER significant indication of an awakening on the part of Germany to the perils of alcoholism is an appropriation of \$500 by the Minister of the Interior to the Good Templars. There had previously been a contribution of \$2500 to the work of the Society against the Abuse of Alcoholic Drinks but this last appropriation is to a society that stands strongly for abstinence.

Juvenile Crime

FROM many judicial directions comes a note of alarm at the increase of juvenile crime. Judge Ronald, of one of the Ohio county superior courts, recently declared that fully ninety-six per cent. of the prisoners who appeared there for sentence were not more than twenty-three years old, and that a majority of their crimes were committed while under the influence of liquor.

Dr. Lambert's study of 275 alcoholic cases in Bellevue Hospital, showed that 68 per cent. began the use of drink before twenty-one years of age, and 53 per cent. began to drink for the sake of sociability. Misery was given as a cause in but 12 per cent. of the cases.

Dr. Albert Wilson in a paper read before the British Society of Inebriety asserts that if he were to report 700 cases of boy criminality of which he has made special studies, there would be found alcoholic parentage in two-thirds, mal-nutrition in most, bad environment in all.

Probably everyone who has read "Twice-born Men" by Harold Begbie, has been impressed by the fact that in every instance but one of the lives there portrayed, drink was either a cause or a constant accompaniment of the degraded condition. In practically every case also, the habit began early in boyhood.

Apparently we shall fail to get at the roots of the matter if we ascribe the drink habit and its consequent crime chiefly to environmental causes. The average youth under twenty-one has not become so burdened with the responsibilities and deprivations of life that he seeks relief in drink, and such causes as mal-nutrition and degraded circumstances in a great majority of cases are traceable to the use of drink. Dr. Wilson calls attention in this connection to the Jews in the East End of London. "It is remarkable", he says, "that while many streets are dangerous to promenade at night, as soon as you go into the Jewish quarter, you find order, cleanliness, thrift and decency. Everyone knows that it is a question of alcohol."

Italy Plans Restrictive Measures Against Alcohol

LOWING accounts of the sobriety in Italy have been circulated in expensive pamphlets by American wine-growers in an effort to promote wine-drinking. Italy, however, apparently has troubles of its own. According to a late United States Consular Report (September 15, 1910) Consul-General James A. Smith writes from Genoa that the Italian Ministry of the Interior has recently directed a circular to the prefects of the several Provinces, instructing them to report on the spread of alcoholism in their respective districts. In order to enable the Government to adopt restrictive measures it requests the fullest statistical information as to the comparative quantity of alcoholic liquors, wine, etc., sold in the various sections of the kingdom during the last ten years and the apparent results which have attended such sale.

COMRADESHIP

"The sky looms ominous and dark,
The times have grown accurst,
Because men's souls with greed are rife;
And yet, the truth that makes men good
Dies not, born of immortal youth,
It hath a ceaseless life.

It need not be a lonely fight,
This warfare for the right,
For he who in the open stands,
May feel, from out the fears
That were and are and yet to come,
The touch of comrade hands."

Moral or Scientific Temperance Instruction

BY THE EDITOR

THE supreme value of the early years of a child's life for training of any kind is recognized alike by parent and teacher. The character of that training often determines the trend of the current of after life.

A question as old as the public school temperance instruction often rises as to what shall be the nature of the teaching in the early school years. Shall it be presented under the head of morals, or shall it deal with the simple hygienic facts; that is, shall it be what is popularity called "scientific instruction"?

Broadly speaking, it may be said that both methods are necessary in effective teaching. But the conception of personal sobriety as a moral question to be treated as such in the case of children fails to take into account the physiological facts that underly it.

As a matter of fact, if instruction is to be in the least definite, it is practically impossible to teach the child morally to abstain without entering the field of the physiological.

A QUESTION OF HEALTH

No one thinks of trying to teach a child to avoid tuberculosis by moral instruction. We teach him certain simple, necessary facts that he ought to know, and on them base the appeal to hygienic living. Similarly, temperance instruction is intended to teach him how to avoid alcoholism with all that it entails, and there is no more reason for confining the teaching to the moral side of the subject than there would be in the case of tuberculosis.

A PSYCHOLOGICAL MOMENT

On the other hand, one of the most marked characteristics of the child up to ten or twelve years of age is his desire to know facts. "Why" and "what" are the questions most frequently, perhaps, on his lips. In a recent book on "Aspects of Child Life and Education" by Dr. G. Stanley Hall, it is said that in a study of children's minds during this first decade of life, of four hundred and sixty-five questions asked by the children, over one-half were on topics relating to nature and the working of natural forces. Nearly seventy-five per cent. were an effort to find out the "why" of things.

This being true, it is good pedagogy, as well as good sense to utilize this age characteristic by the simple teaching of the facts adapted to that age rather than to depend solely on the moral appeal which does not satisfy this desire for information.

Two practical reasons are perhaps paramount for teaching children of this age facts about alcoholic drinks and tobacco.

COUNTER INSTRUCTION IN FACTS

The first is that during those years in the majority of cases he is receiving very definite instruction in favor of these beverages. For instance, he passes on his way to school a dozen or more billboards, most of them specifically stating the benefit that certain beers, ales, or whiskies will confer on the drinker. That is physiological teaching. It is not to be met successfully by purely moral teaching.

THE TREND OF EXAMPLE

Secondly, there are thousands of homes where the child learns to drink, even before a dozen years of age, by example or by precept. Many a mother in immigrant or other homes gives her children beer in the mistaken idea that it is good for them. Here is a physiological error being woven into the habit of the child. It must have the counteracting influence of physiological truth.

FINDING THE POINT OF CONTACT

This does not mean that technical, abstruse ideas are to be indiscriminately turned loose upon the child at an early age. There must be common sense exercised in the selection and adaptation of facts as in any other subject. A study of the subject matter and of children's interests very soon discovers a point of contact, and this done, there is no reason why the child in the first five or six school grades should not learn the essential reasons for letting alcohol and tobacco alone.

This does not, and should not, of course, bar out the moral appeal, but it gives it strength, reasonableness, and interest. Both are needed. One only needs try the two methods, however, to discover how the teaching of facts suitably chosen and presented, holds interest which is so essential an element of successful instruction, and how quickly attention and interest flag under purely moral teaching.

Whether we consider the question from the standpoint of the modern conception of the drink habit, or of the psychological development and the interests of the child, or of the influences which surround him, or of practical experience, there is every advantage on the side of emphasizing the scientific facts about alcohol and tobacco even in the early school years.

It is heaven upon earth to have a man's mind move in charity, rest in Providence, and turn upon the poles of truth.—Lord Bacon.

Class-Room Helps

Conducted by Edith M. Mills

Methods of Anti-Cigaret Work in the Sixth Grade*

I SUPPOSE, Miss Loren, you find the same difficulty with cigaret smoking that other teachers have", said the Observer. "What do you do about it?"

"I don't think we have been having so much trouble here as in some schools," she replied.

THE INFLUENCE OF EXAMPLE

"We have had an organization of the anti-cigaret league for some time, and in addition to this and to the instruction in the grades, the boys have had the splendid example of the head master and the men of his staff, all of whom are non-smokers and throw their influence against the habit which really seems to be dying out in our school.. During the year the number of boys who smoked at all was unusually small, only one boy, I think, being seriously affected by this harmful vice, and he entered late in the year."

In reply to questions as to ways and means of work along these lines, the Observer gleaned helpful suggestions which she has endeavored to transcribe.

The fact that this year cigaret-using was, fortunately, reduced to a minimum did not make her negligent in teaching the nature and effects of alcohol and nicotine. It was her duty and earnest purpose to teach the beauty, the value of health and to thoroughly instill hygienic habits which would ensure it. On the other hand, it was necessary to warn the children against the use of narcotics to which they would be tempted and which might easily undo all the good of the positive instruction. Accordingly, the poisonous nature of nicotine and of alcohol, and the effects of each on the body and its efficiency were taught in an impartial but interesting way as any other desirable scientific facts would be taught.

RATIONAL TREATMENT OF NICOTINE AS A POISON

But here she applied the knowledge she had gained from the confidential talks with the children and, as she carefully explained, she felt this point was of the greatest importance. These were not grown people able to understand that in the physical world as elsewhere,

things are not always what they seem, but children lacking in judgment, experience and self-control.

For example, she asked them to mention the poisons they knew of and asked if anyone had heard of accidental poisonings, and if so, what was done? Probably two or three of the children could tell of some case and how antidotes had to be administered in hot haste.

Then she explained the difference there is in poisons. Those of which they spoke, like carbolic acid, for instance, were quick poisons. Others like lead, poisoning from very long use of paint or water from lead pipes, are very slow indeed. Sometimes, e. g., painters go on painting for years seemingly not harmed a bit, and then suddenly they fall dreadfully ill and often die. To look at these men before they fell sick, no one, perhaps hardly a doctor even, could tell that they were not as well as anyone, yet all this time the poison was piling up little by little and undermining health and strength till all at once they sickened and died.

Perhaps, she would continue, you children think that because alcohol or tobacco is not labeled with the skull and crossbones and "Poison" in big letters, or that because people seldom get enough of either of them at one time so that it is necessary to have an immediate antidote, they are not poisons. [As a matter of fact, bottles of alcoholic liquors are so labeled in Russia.]

Have not some of you heard of children being poisoned to death sometimes by eating a little tobacco or sucking an old pipe? And doesn't everybody know how sick people are the first few times they smoke? (Other examples showing the virulence of nicotine are easily available.) These show clearly that nicotine in any but the tiniest amounts is very poisonous. It may be harmful to the health even when taken in the very small amounts one gets by smoking, although you find that hard to believe because it may act slowly like lead poison, and one may not notice for years that he is being harmed.

THE METHOD OF TEACHING THE FACTS

Then using the guarded statements of the text books instead of careless generalizations,

*Prepared from notes obtained from a successful Boston teacher whose school was visited.

she carefully taught the ways in which tobacco is harmful to the body, and used interesting illustrations freely to make the boys clearly understand just why it is unwise to smoke.

She explained very carefully that neither the book nor the teacher intended to teach that all of the evil effects of cigaret-using were likely to come to any one boy. She admitted freely that possibly a boy might be a smoker and not seem to be hurt at all and that some men smoke a long time and do not suffer much so far as can be seen from the outside. What they were being taught might seem untrue because observation seemed to contradict it.

When they saw a boy or a man smoker apparently unharmed they must not think that such cases proved untrue what they had been taught, namely, that wise doctors say that few if any boys or men can use tobacco habitually without being injured sooner or later. These smokers, like the men poisoned with lead, may be seriously poisoned.

And after all, even if they might know quite a number who seemed to have received no harm, does not everyone know of other men who do freely admit that their smoking hurts them, and had they not heard of some who had undoubtedly lost their lives? Is it not true that of the boys they had known who smoked, many were behind their classes and not so strong and active as they ought to be? Isn't it unwise to form a habit that certainly hurts a great many and probably in time does everyone some harm?

In the cases of smoking as in those of other unhygienic habits, she dealt tactfully and sympathetically with individuals, the following being a case in point.

SAVING THE CIGARET BOY

One day a boy was transferred to her school late in the year. He was evidently a great smoker for the odor of cigarets was sickening. He was won at first by the kindness of the children and the teacher and afterward, in the confidential talks she had with him, he admitted that he had smoked for some time and all the cigarets he could lay his hands on. He was behind in his work and admitted that in the other schools he had attended he had been a bad boy.

She said to him, "I always feel sure that boys like you will obey me nicely."

"I don't understand why," muttered the boy, somewhat taken aback.

"Because," said this tactful teacher, "of course you will be willing to mind your teacher when you mind this little bit of tobacco rolled up in paper. Think how many times you have been ruled by just a little piece.

You see a cigaret butt in the street and it says to you 'Come and pick me up and smoke me, and you mind sometimes several times a day.' You know it harms you, too."

The boy hung his head and pondered over this new idea. He became obedient. From time to time she talked kindly with him in private, asking him how many times he had smoked, and he answered her truthfully. Then she would coax, "Now, tomorrow, see if you can't pass by the first butt that asks you to pick it up. Say to yourself, 'I won't smoke this one. I will wait till I see another.' And when you see the next, see if you can't pass that one. Perhaps you can manage to go all day."

She asked him how the struggle went and gave him helpful suggestions. Before the term closed she had reduced his number to two or one daily. He failed to be promoted, so if he has not lost all the ground gained, and more, too, during vacation, she hopes eventually to help him get free from the habit.

The idea of his "obeying that little piece of a cigaret the size of a finger," evidently made a great impression on his mind and helped considerably with discipline as well.

JAPANESE LULLABY.

By Eugene Field.

Sleep, little pigeon, and fold your wings,
Little blue pigeon with velvet eyes;
Sleep to the singing of mother bird swinging—
Swinging the nest where the little one lies.

Away out yonder I see a star—
Silvery star with a twinkling song;
To the soft dew falling I hear it calling—
Calling and tinkling the night along.

In through the window a moonbeam comes—
Little gold moonbeam with misty wings;
All silently creeping, it asks: "Is he sleeping—
Sleeping and dreaming while mother sings?"

Up from the sea there floats the sob
Of the waves that are breaking upon the shore.
As though they were groaning in anguish and
moaning—
Bemoaning the ship that shall come no more.

But sleep, little pigeon, and fold your wings—
Little blue pigeon with mournful eyes;
Am I not singing? See, I am swinging—
Swinging the nest where my darling lies.

—Selected.

NOTE. The poem above, by Field may be used as the starting point for a primary lesson on Sleep and Rest. Points that may be discussed are:

(1) Need of rest; (2) preparation for rest (complete or partial bath, care of clothing, darkening the room, arranging for good ventilation, etc.); (3) how to rest (nearly straight in bed with low pillows or none at all); (4) care of the bedroom after rest.

Pick out 12 drinking men you knew 12 years ago. Then see where they stand in the game today. That's all for the highball.—
Boston Herald.

Abstinence and Long Life

BY CORA FRANCES STODDARD

"Those who don't drink, don't die so fast".
"Abstainers are less liable to accidents and more quickly recover from injuries than persons who are not abstainers."

PLACE these quotations from life insurance officers on the blackboard, also a reproduction of the drawing given in the second column.

Discuss with the class life insurance and health insurance. What is their object, their method, their advantages? Why do life insurance companies require that persons applying for insurance have good health?

A YOUNG ENGLISHMAN'S EXPERIMENT

Tell the story of the young Quaker in England, Robert Warner, who wished, in 1840, to insure his life. He applied to a London office for a policy. When it was learned that he was an abstainer, he was told that he must pay extra for his insurance because the managers of the company then (70 years ago) believed that the use of alcohol was healthful, and that a man who was an abstainer would not live so long as a user of alcohol.

The young man did not think so, nor did he want to pay extra because he was an abstainer. So he took steps to form a new life insurance company which should insure abstainers only. It had a very long name—United Kingdom Temperance and General Provident Institution. For ten years it insured only persons who were abstainers. Then it opened a new section for those who were not abstainers, but only very moderate drinkers were permitted to take out policies.

After several years had passed, it was found that the young man had been right and the old insurance company wrong, that, on the average, abstainers lived considerably longer than those who drank only moderately. Other British companies later adopted the plan of keeping abstainers and moderate drinkers in separate sections and giving the abstainers more favorable terms.

THE GREATER NUMBER OF DEATHS AMONG THE DRINKERS

Turn to the diagram on the blackboard which represents the experience of many years in two of these companies. Call attention to the lower death-rate in each instance in the case of the abstainers.

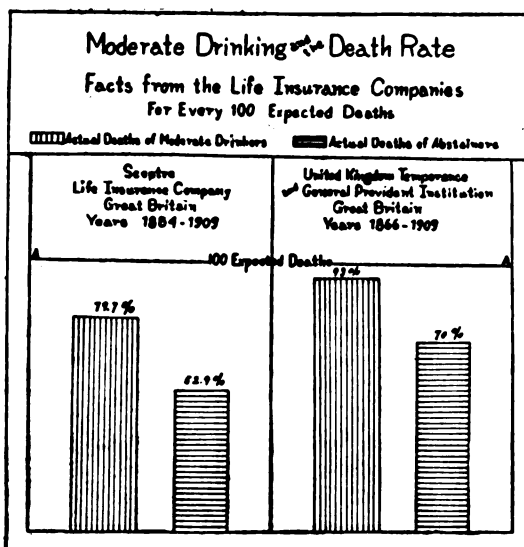
Guard against leaving the impression that every abstainer will live longer than every moderate drinker. This diagram represents the *average* of many thousands of lives, and it is only by getting records of such large numbers that we can judge fairly of what is likely to be true, although there may be individual

exceptions. Especially emphasize the fact that this is a difference between abstainers and so-called moderate drinkers.

WHY DRINKERS ARE LIABLE TO BE WORSE INSURANCE RISKS

Sickness. Place on the blackboard the following table or the diagram representing it (Journal, Feb., 1910), which shows the comparative amount of sickness among abstainers and drinkers in Austrian benefit societies.

	Duration of sickness	Deaths among sick
Abstainers	6.4 weeks	3.5 p. c.
Non-abstainers	10.9 weeks	6.5 p. c.



How many more weeks on an average did the drinkers lose by sickness than the abstainers? Incidentally the greater financial loss may be worked out in loss of wages and expense of sickness.

Discuss the reasons why the alcohol-user is more liable to be sick—impairment of nutrition, lowered resistance to germ-caused diseases, impairment of the heart or nerve control. Why do surgeons dread surgical cases and drinkers in Australian benefit societies.

Accidents. Show how the use of alcohol increases liability to accidents by lessening the ability quickly to see and to avoid danger. Accident insurance experience shows, too, that abstainers recover from injuries more quickly than drinkers.

WHAT ABSTINENCE SAVES THE INSURED ABSTAINER

American insurance companies as a rule do not give special rates to abstainers. The advantage he should have, however, is shown by the experience of the British companies, several of which allow a reduction of five per cent. to the abstainer. If a man is paying \$100 a year for insurance, how much would he save by abstinence? How much in twenty or forty years?

Note that the company may call at any time upon policy-holders who wish this reduction to promise to continue to be abstainers. Any one who is unable or unwilling to make this promise has to pay the higher rate.

Leave on the blackboard the following question and replies given by various American insurance companies to a New York paper some years ago.

QUESTION

"As a rule, other things being equal, do you consider the habitual user of intoxicating beverages as good an insurance risk as the total abstainer? If not, why not?"

ANSWERS

Mutual Life: "No."
Aetna Life: "No. Drink diseases the system."
Berkshire Life: "No. Drink destructive to health."
Michigan Mutual: "No. Drink reduces expectation of life."
Provident Savings Life: "No. Drink cuts short life expectation."

Physiology as a Science Study in the High School*

BY GRACE F. ELLIS

Instructor in Biology, Grand Rapids (Mich.),
Central High School

I DO not feel inclined to modify the statement I have made before that physiology is the most important science in the curriculum. To it every other science, properly arranged, should lead; to it, also, the pupil should bring not only the facts of botany, zoology, chemistry and physics, but the feeling that here he is to learn how to make the most of himself—the best use of this wonderful machine which holds us each, and through which, and by means of which, we make the world better by our having lived.

PHYSIOLOGY AS A PART OF ZOOLOGY

The optimum and logical preparation for [high school] physiology would be that botany, zoology, chemistry and physics should precede it. This might be accomplished by placing it in the last half of the twelfth year. Parenthetically, let me say that we expect to offer such a course after this year, and that physiology is also taught in connection with zoology during a year's course in the latter subject. It is a part of the zoology, not a subject taken up at the end of work on vertebrates, but introduced by the study of foods, when we reached a point on invertebrate work where that could profitably be handled; by a farther study of glands and digestion, when glands and their functions became of interest in the zoology and by a study of motor organs (amœboid cells, ciliated cells and muscles), when in worms and mollusks muscular activity was noticeable.

Study of circulatory systems is made when any animal large enough to have a distinct system for the circulation of blood, is taken up in the laboratory. Respiration and excretion follow naturally.

The study of the nervous system will be taken up in connection with work on vertebrates, beginning with functions of nerves and ganglia when the class finishes the work on arthropoda. The skeleton in this course will be the last thing to be considered, instead of, as often, the first thing, and in connection with it will be some work on muscles.

This outline is not primarily of physiology, but only of that treatment of the subject which it seems to me ought to be included in any course in zoology, unless the zoology has been preceded by physiology, or is to be followed by it.

PHYSIOLOGY AS AN INDEPENDENT SUBJECT

Where physiology is to be studied by itself, the first thing to be considered in outlining the work is where it is to come in the high school course. I have indicated what I consider its proper place. Others will undoubtedly think differently, but, at any rate, all will agree that if it is not preceded by some chemistry and physics, it must be illustrated by simple experiments in order to make it comprehensible by the student.

The teacher of physiology may talk of oxidation and digestion, of proteids in the food, calcium phosphate in the bones, of carbon dioxide, and nitrogen in the air, but unless he and his pupils understand the elements of

*Prepared for the Conference of the Biological Section of the Michigan Schoolmasters' Club, Ann Arbor, Mich.

chemistry, unless they see and handle the things they talk about, they might as well talk of Greek verbs. With the microscope he may show them cells, but he cannot go further—unless he is a chemist—and show them that the whole complex animal body has been built up of three invisible gases and carbon.

In this I find the starting point for my work; in the laboratory, without any text-book and only a sheet of directions as to processes, and questions as to results, the learner finds out for himself something about the substances which enter into the composition of his own body.

This introductory work is followed by a set of very simple experiments on acids and alkalis, and the whole by a sharp quiz to "fix" the results. Then the study of food can be introduced with experiments to show the reactions of various tests for starches, sugars, proteid, fats and minerals. A few foods may be tested to show how many and what food principles they contain, these studies to be followed by a series of experiments on digestion in which test tubes, containing foods and digestive fluids, are suspended in a water bath with a chemical thermometer and kept at a temperature of 99 degrees F.

While the work on foods is going on in the laboratory in the class-room we discuss work and energy, uses of foods, etc., and oxidation and combustion are illustrated.

The alimentary canal and digestion are then studied in detail. The former illustrated by slides to show structure of stomach, intestines, glands, etc., and the latter by experiments on fat-digestion (emulsions and soaps) and absorption. A bit of sausage skin tied over the flaring end of a test tube whose closed end is chipped off will give good results as to absorption of digested and undigested proteids.

[In this connection show (a) that since alcoholic liquors contain no appreciable food values, the nutrient principles of the fruits and grains having been largely destroyed during the chemical process of fermentation, and the alcohol itself cannot furnish nourishment without injury to the body, they cannot be considered as foods; (b) extensive experiments have shown that alcoholic liquors irritate and injure the stomach, slow peristalsis and weaken the power of the gastric juices. Similarly the study of each of the other systems should include the functional and organic effects of alcohol and nicotine. *Ed.*]

We follow digestion with circulation. When it is possible we have in the laboratory three jars of blood, the whipped, coagulated, and fibrin from the first, with a microscopic study of frog's and human blood. This gives

us an impetus; aided by study of circulation in the frog's foot—or, better still, in the tadpole's tail or the caudal fin of a small fish, the interest grows until it is positive excitement when we study the beating heart of a frog, and dissect the calf's heart from the market.

Let me say in passing that careful counting and timing with a watch will show the comparative length of work and rest periods for the heart.

Difference in arterial and venous currents, pulse, arterial spurting and slowing of blood flow in capillaries are all illustrated in a simple piece of apparatus consisting of glass Y-tubes and rubber tubing.

At the end of this work, along with quiz and laboratory notes, I require each pupil to put on the blackboard or on paper his notion of the structure of the heart in a diagram that shall show chambers, valves, blood vessels, etc.

Respiration and excretion are next in order. So essential does the study of lung capacity seem to me that I have devised an apparatus for its measurement, a figure of which was published in *School Science*, Vol. 1, No. 7, p. 372. Accompanying it is an outline of the questions each pupil answers in regard to it. When the work is handed in, a personal talk with each pupil emphasizing the points made is very helpful. Students take pride in a good lung record and often take pains to improve it, taking occasional measurements through the year.

Dissection of kidney and slides of sections through the skin sufficiently illustrate the functions of excretion.

The students do not open their text-books to study the nervous system until they have made a series of simple experiments to get an idea of the use of nerves and ganglia. In this work, especially, should care be taken that the learner distinguishes in the experiments the results he observes from the inferences drawn from these results.

THE VALUE OF PHYSIOLOGY AS A CULTURAL STUDY

If we should study the growth of civilization we should find it had been brought about by the mental operations of independent observation, experiment, classification, deduction and generalization. These lie at the bottom of all scientific study, all scientific knowledge. The most profitable science teaching is that which teaches a pupil proper observation and experiment.

When physiology is challenged at the threshold of the high school—what do you bring that we should admit you here?—it

must be able to answer and to prove with its kindred sciences that it brings the power of independent thought which is the greatest object to be desired among the masses of the people in present or future time.

Speaking of the moral factor in education at the N. E. A. last summer, President Faunce, of Brown University, said "Over every true school might well be inscribed the sentence which we find in Genesis: 'Let us make man.' Over the entrance to its scientific laboratories may be written: 'Let us help man to make the most of himself.' He who teaches at all follows in the wake of the Creator. He who teaches biology knows that the handful of dust which composes man worked its toilsome way from lowest protozoan to highest mammal, from mammal to man, and through an epitome of race history he must develop afresh the powers of each student.

"With earth's first clay they did the last man knead,

And then of the last harvest sowed the seed,

And the first morning of Creation wrote
What the last dawn of destiny shall read."

Physiology, hygiene and sanitation should, in the mind of the teacher, be the interpretation of the simple physiology of our course of study; for a knowledge of physiology is required in life, far beyond the ground covered by a course of lectures or an elementary textbook.

It is desirable that there be a widespread understanding of the nature of contagious diseases in order that the action of medical boards and boards of health may have a meaning in the minds of the public at large. The creation of such an understanding seems to me an important duty of the public schools.

Some of the most important questions we have to face in our country today arise from ignorance or reckless disregard of the fundamental facts of human existence. The unsanitary condition of the slums, the restriction of disease, the essential facts of contagion and disinfection, the conception of bacteria, infection, and prophylactic measures, the children with neglected eyes and teeth and bodies, social evils and wrongs from customs contrary to physiological facts—all these must be remedied by the train of young men and women in our laboratories, who shall save society. We can prevent it from becoming the prey of the evil only by procuring the wise and good who shall overcome the evil.

That righteousness tendeth to life, and the wages of sin is death, is not only morality, but physiology. Correct action is dependent upon correct thinking. The more familiar a

man is with the laws of nature, the more he will obey them and work in harmony with them, to the benefit of himself and his fellows.

Huxley said long ago: "There is a very convenient and handy animal which everybody has at hand, and that is himself. * * * Hence the general truths of anatomy and physiology can be taught to young people in a very real fashion by dealing with the broad facts of human structure. * * * So that, in my judgment, the best form of biology for teaching to very young people is elementary human physiology."—*School Science*.

The Harmfulness of the Cigaret

By FREDERICK S. DENNIS, M. D.

Prof. of Clinical Surgery, Cornell University Medical School

THE tendency to beer drinking is greatly strengthened by cigaret smoking, because this habit becomes almost constant and causes a dryness of the throat and fauces and hence irritates the throat. Immoderate cigaret smoking destroys to a certain extent the conductivity of the motor nerves, and likewise affects the motor tracts of the cord. The cigaret smoker forms a habit which unfits him for performing mechanical work in which great delicacy of manipulation is necessary. This form of smoking is universally prohibited among athletes during the period of training. By inhalation the nicotine becomes volatile, engenders a gas which acts as a poison and prevents the capillary system from performing its normal function, which in time affects growth. The action on the heart is deleterious, and gives rise to the smoker's heart which is incapable of strain in any great physical emergency. It is not only the heart, but all others organs which sooner or later become affected so that digestive and respiratory functions are impaired.—*New York Medical Journal*, May 28, 1910.

Honest Anyhow

Mr. Hans:—"Doctor, I ain't got much money. Vill you dake my bill out in trade?"

Dr. Gans:—"Why, I might. What's your business?"

Mr. Hans:—"I'm der leader off de liddle Cherman band. Ve'll blay in front off your house effry evening."

THE BOOK TABLE

THE BIBLE AND WINE. By Farrar Fenton, M. R. A. S., M. C. A. A. 125 pp. \$75.

THIS new discussion of an old subject is not to be dealt with critically save by experts qualified to judge of the accuracy of translation. To the lay reader, however, this new translation of all the biblical texts referring to wine or strong drink or so translated in the accepted versions is both interesting and illuminating.

Briefly stated, the writer's contention is, that owing to a "defective knowledge of Hebrew, the old Greek and Latin translators and the European ones of the period of the Reformation translated indiscriminately as 'wine' or 'strong drink'," eight or nine different words some of which referred to vegetable products not naturally intoxicating or to non-intoxicating products of the vine, while a more accurate knowledge of Hebrew customs shows that in many instances, there must have been mistranslation. On the other hand, Mr. Fenton holds, that where words meaning fermented drinks are used, the context usually indicates unmistakable condemnation of the habit.

Of most interest, perhaps, is the discussion of the three New Testament passages most often quoted in support of drinking alcoholic wine, viz., the Miracle at Cana, the Lord's Supper and Paul's advice to Timothy.

In the first instance, the author maintains that among the old Orientals and the Romans, the "best wine" was made by boiling down grape-juice until it was thick; in that state, it was stored away for future use to be eaten like butter, or mixed and stirred up in water to make a drink and this was the "best wine". Pliny is quoted as recording that grape juice was boiled down one-third to secure its finest flavor. This, of course, would be an unintoxicating drink.

As to the "wine" used at the institution of the Lord's supper, the author says that no word is used that would necessarily indicate fermented wine, the term being "the fruit of the vine", and, furthermore, that "it would have been very remarkable if a fermented wine had been used since the Israelites were forbidden to use, eat, or drink any fermented

article of food, not only on the day of the Passover, but for seven days before it", and that its use on that occasion "would in the minds of His apostles, have been such a violation of the law that Peter, at least, 'into whose mouth nothing common or defiled had ever passed' would have refused the cup."

Paul's oft-quoted advice to Timothy to "take a little wine" it is claimed contains a serious error in translation, and should have read according to the Greek idiom, "No longer drink water alone, but use with a little wine for the stomach's sake because of your frequent infirmities." "Stomach wine", or 'wine for the stomach', old writers on Greek medicine say was grape-juice prepared as a thick fermented syrup for use as a medicament for dyspepsia and weak persons, and there can be no doubt but that was what Paul told his friend to 'use' a little of, mixed with water, to which it was evident that Timothy, like other pious Jews of that period has restricted himself so as to avoid breaking the Levitical command against priests' drinking 'wine or strong drink' during their ministry".

Not all the passages or comments of the book seem entirely free from the forcing of a point, yet it is a suggestive commentary on a phase of the alcohol question which is still the source of much perplexity to many persons.

ALCOHOL A DANGEROUS AND UNNECESSARY MEDICINE. By Mrs. Martha M. Allen, World and National Supt. of the Dept. of Medical Temperance of the W. C. T. U. 410 pp. \$1.25.

THIS is a second and revised edition of perhaps the only existing compilation of facts relating to non-alcoholic medication. It includes a history of the scientific study of the facts about alcohol, and of progress in its disuse as a medicine, with results of non-alcoholic treatment, and tried substitutes for alcohol. The subject of "patent medicines" is fully treated. There is an interesting collection of statements recently gathered by the author from hospitals, medical schools, and physicians in private practice showing that the alcoholic treatment has been greatly superseded in late years by other safer methods.

CIGARET STEREOPTICON SLIDES

DOORS CLOSED TO THE CIGARET USER. Plain.
HANDWRITING OF CIGARET USERS. Plain.

TOBACCO AND SCHOLARSHIP. Colored Diagram.
TOBACCO AND DEVELOPMENT. Colored Diagram.

Prices, Plain \$40 each. Colored \$1.05 each.

Scientific Temperance Federation,

23 Trull St., Boston, Mass.

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

An Educational Temperance Organization

Purpose:—To make known in every possible way, in popular form, the proved facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

REV. CLARENCE A. VINCENT, D. D., Boston, *President*
REV. D. STUART DODGE, D. D., New York, *Vice-President*
CORA FRANCES STODDARD, Boston, *Corresponding Secretary*.
E. L. TRANSEAU, Boston, *Recording Secretary*.
ROBERT H. MAGWOOD, *Treasurer*.

Scientific - Educational

The only organization making a specialty of collecting and supplying the scientific facts about alcoholic drinks and other narcotics.

Methods of Education

Loan Exhibit of Original Colored Charts. New Scientific Temperance Stereopticon Slides. Editors' Press Circular. Leaflets. Pamphlets. Special information supplied by helpful correspondence.

Membership

Associate Members, annual fee, \$1.50, receive samples of publications issued by the Federation and may obtain special information desired. Sustaining members are those who contribute \$10. The payment of \$100 constitutes one a life member.

A New Method!

Travelling Loan Exhibit

—Of—

ATTRACTIVE DIAGRAMS

Showing

Scientific Facts about Alcohol

WHAT IS IT?

Exhibit consists of 25 Colored Charts (framed or not as desired, size 22x28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other Infectious Diseases, Longevity, etc. No objectionable details. Based on most reliable scientific experiments. Excellent for No-License Campaigns.

WHO USE IT?

General Expositions
Teachers' Institutes
Charitable Organizations
Christian Endeavor Conventions
Sunday School Associations
Temperance Lecturers and Conventions
Physicians, Ministers
200,000 persons have seen these charts in two years.

HAVE YOU HAD THEM?

Send for Full Information as to Expense and Plan for Use.

Scientific Temperance Federation

23 Trull Street, . . . Boston, Massachusetts

ALCOHOL in Every- Day Life!

ILLUSTRATED LECTURE

A New Story in A New Way

THE scientific side of the alcohol problem is here presented in a popular lecture which appeals to the eye as well as to the ear by means of 60 fine new lantern slides. These include interesting pictures, a number in colors made from original drawings representing the results of scientific experiments, and a few attractive physiological plates.

Most important phases covered. Nothing objectionable.

AVAILABLE AND SPECIALLY DESIRABLE FOR

No-License Campaigns, Public Temperance Meetings held in Churches or by Temperance Organizations, Labor Unions, Societies of Christian Endeavor, Loyal Temperance Legions, Patrons of Husbandry, Lyceums and Chautauquas, Parental or Industrial Schools, Social Betterment Workers, and for Teachers' Institutes and Receptions, and High and Normal Schools.

Subjects of Some of the Slides

Alcohol and Hard Work.
How Muscle Work is Measured.
Alcohol and Endurance.
Which Way Lies Success in Sport.
A Sixty-Mile Walking Match.
What Yale Football Men Say.
The Cost of a Mistake.
A Story for Bookkeepers.
Effect of Alcohol on Marksmanship.
Alcohol and Typesetting.
What the Shoe Manufacturer Knows.
A Healthy Nerve Cell.
What Alcohol Does to the Nerve Fibres.
Why Doesn't he Control Himself?
Accidents and Drinking Days.
Where Accidents are Liable to Occur after Drinking.
Drink and Lead Poisoning.
Comparative Sickness of Abstainers and Non-Abstainers.
Drink and Impaired Vigor of Children, Etc.

Comment on Lecture

The lecture "Alcohol in Every-Day Life" is an exceedingly interesting and rarely wholesome presentation of the latest and most scientific methods of discussing alcoholism. Any one who works among the masses in our cities sees the awful havoc wrought by drink in the social, industrial, moral and spiritual life of the people. But very few know much, if anything, about the scientific facts presented in this illuminating lecture—Rev. Winfred C. Rhoades, Elliot Congregational Church, Boston, Mass.

Full information as to terms for lecture on request.

Scientific Temperance Journal, 23 Trull St., Boston.

SCIENTIFIC TEMPERANCE JOURNAL

— *Continuing the* —
SCHOOL PHYSIOLOGY JOURNAL

What Boys and Girls Can do for Their Country *

✻ ✻ ✻ By JULIA WARD HOWE ✻ ✻ ✻

May 27, 1819

✻ October 17, 1910

I WANT them to build up character in themselves and in the community, to give to the country just so many men and women who will be incapable of meanness or dishonesty, who will look upon life as a sacred trust, given to them for honorable service to their fellow men and women. I would have them feel that, whether rich or poor, they are bound to be of use in their day and generation, and to be mindful of the Scripture saying that "no man liveth unto himself." We all have our part to do in keeping up the character and credit of our country. For her sake we should study to become good and useful citizens.—*Pilgrim Teacher.*

* Written soon after her ninetieth birthday in reply to the question, "What can children do for their country?"

Published at—
BOSTON, MASS.

NOVEMBER, 1910

New Century Series

—OF—

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fulness and accuracy of the treatment in regard to the nature and effects of alcoholic drinks and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

An Educational Temperance Organization

Purpose—To make known in every possible way, in popular form, the proved facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

REV. CLARRANCE A. VINCENT, D. D., Boston, *President*
REV. D. STUART DODGE, D. D., New York, *Vice-President*
CORA FRANCES STODDARD, Boston, *Corresponding Secretary*
E. L. TRANSBAU, Boston, *Recording Secretary*
ROBERT H. MAGWOOD, *Treasurer*

Scientific - Educational

The only organization making a specialty of collecting and supplying the scientific facts about alcoholic drinks and other narcotics.

Methods of Education

Loan Exhibit of Original Colored Charts. New Scientific Temperance Stereopticon Slides. Editors' Press Circular. Leaflets. Pamphlets. Special information supplied by helpful correspondence.

Membership

Associate Members, annual fee, \$1.50, receive samples of publications issued by the Federation and may obtain special information desired. Sustaining members are those who contribute \$10. The payment of \$100 constitutes one a life member.

World's Temperance Sunday, Nov. 27, 1910

LITERATURE FOR PREPARING LESSONS

and for

SUNDAY SCHOOL PUPILS

	per 100
Causes of Alcoholism,	\$.15
Facts About Alcohol,	.15
Drink and the Doctor's Bill,	.15
Alcohol and the Death-Rate,	.15
Sinning Against the Unborn,	.15
Alcohol and Degeneration (Colored Chart),	.65
Tuberculosis and Alcoholism,	.35

WINE AND BEER LEAFLETS

False Claims for Wine,	.35
Wine to Drive Out Drunkenness,	.30
Wine a Peril to Childhood,	.30
Alcoholism in Wine-Drinking Countries,	.30
Dangers in the Use of Beer,	2.50
Plain Facts about Beer,	.40

Sample package

20

Literature ready for distribution

400 leaflets \$1.00. Order as "Package No. 1" or "Package No. 2." Each contains simply stated practical facts about alcoholic drinks. Just what you want to create really intelligent temperance sentiment in your community.

Package No. 1, 50 leaflets each of 8 different kinds.

Package No. 2, 100 leaflets each of four different kinds.

THE BIBLE AND WINE

By Ferrar Fenton, M. R., A. S., M. C. A. A.

A new study and translation of Texts Referring to Wine and Strong Drink. A suggestive treatment of the subject for all interested in that phrase of the question. 150 pp. Postpaid \$.75

World Book of Temperance

By Dr. and Mrs. Wilbur F. Crafts.

Contains notes and illustrations for Sunday School lessons for six years. Scientific, economic, social and scriptural facts make it especially valuable for ministers and teachers.

World Book of Temperance	\$.85	} ONLY
Scientific Temperance Journal	.60	

\$1.25

Scientific Temperance Journal

23 TRULL STREET, - BOSTON, MASS.

• CONTENTS •

	Page
Teacher's Connection with the Alcohol Question,	33
Two Great Public Scourges,	35
Fifty Year's Growth,	36
A Reform that Everybody Can Help,	37
Childhood's Martyrdom,	38
Controverting Science,	39
Editorials,	42
Perils of Drinking and Gambling in Building a Career,	43
Science the Handmaid of Religion,	43
Class Room Helps.	
Care and Preservation of the Teeth,	44
Why a Boy Should not Smoke,	46
Lessons in Habit Building for Little Folks,	48

SCIENTIFIC TEMPERANCE JOURNAL. - 23 Trull Street, Boston, Mass.

Please mention the Scientific Temperance Journal when writing to advertisers.

Scientific Temperance Journal

Vol. XX

BOSTON NOVEMBER, 1910

No. 3

A Thanksgiving

By Bliss Carman

It is the mellow season
When gold enchantment lies
On stream and road and woodland,
To gladden soul's surmise.
The little old gray homesteads
Are quiet as can be,
Among their stone-fenced orchards
And meadows by the sea.

Here lived the men who gave us
The purpose that holds fast,
The dream that nerves endeavor,
The glory that shall last.
Here strong as pines in winter
And free as ripening corn,
Our faith in fair ideals—
Our father's faith—was born.

Here shone through simple living,
With pride in word and deed,
And consciences of granite,
The old New England breed.
With souls assayed by hardship,
Illumined, self-possessed,
Strongly they lived, and left us
Their passion for the best.

On trails that cut the sunset,
Above the last divide,
The vision has not vanished,
The whisper has not died.
From Shasta to Katahdin,
Blue Hill to Smoky Ridge,
Still stand the just convictions
That stood at Concord Bridge.

Beneath our gilded revel,
Behind our ardent boast,
Above our young impatience
To value least and most,
Sure as the swinging compass
To serve at touch of need,
Square to the world's four corners,
Abides their fearless creed.

Thank we the Blood that bred us,
Clear fibre and clean strain—
The Truth which straightly sighted
Lets no one swerve again.
And may almighty Goodness
Give us the will to be
As sweet as upland pastures
And strong as wind at sea.

—Collier's Weekly.

The Teacher's Connection With The Alcohol Question*

By CITY SCHOOL INSPECTOR WEISS OF NURNBERG

I HEARTILY concur in the opinion that it is urgently desirable to bring children up as free from alcohol as possible and that we should persistently strive to do so. As an impressive warning teachers should frequently call to mind those words of a well-known physiologist and psychologist: Children under fifteen should on no occasion receive alcohol in any form. It is a crime,—I can not call it any thing less—to let children have a definite quantity of alcohol daily.

THE FREQUENCY OF YOUTHFUL INDULGENCE

It is possible, of course, to raise the question whether the use of alcohol by children is so general as to render it necessary to include definite opposition to it in the educational program. Unfortunately, it must be said that numerous inquiries and investigations, small and extended, private and official in Germany and other countries answer the question in the affirmative and certify to the

fact that the number of children who daily drink alcoholic liquor is considerable; that here and there it is used by girls more than by boys; and that the number of children in various localities is relatively very large. Cases like those reported by Stumpf from Munich, in 1899, in which children a year old, showed symptoms of premature use of beer, are fortunately not frequent.

THE HANDICAP TO EFFICIENCY

It is not necessary to present figures from the numerous findings; more interesting is the fact, likewise abundantly established, that an indubitable connection exists between the use of alcohol and inefficiency and, therefore, that the increasing use of alcohol brings with it a proportional impairment of the child.

If, in addition to this, we accept the fact established by physicians and other men of science that the use of drinks containing alcohol even in small amounts may have an injurious influence upon the body, one will no longer deny the close connection between combating intemperance and training the young.

*From an address given at the 26th Annual Meeting of the Deutscher Verein gegen den Missbrauch geistiger Getränke, Nurnberg, Germany, September 13-16, 1909.

The scientific findings are to be regarded the more seriously because the detrimental effects are not limited to the individual, but are transmitted to offspring as well.

The many individual experiences which teachers meet with every year in their classes, which are particularly striking and often shocking in the charity schools and institutions, all affirm what has been previously said and lead us to this conclusion: *It is a pedagogical and national task to take up temperance work seriously and impressively in the education of the young.*

In order to promote the physical development of the young we build spacious school houses with provisions for light and air and all hygienic requirements, fit up large playgrounds, allow the children to have gymnastics, sports, baths, excursions; install dental clinics; we are not insensible to the call for better care of the health, but it is also our duty to oppose everything that may weaken or kill the finer sensibilities, the finer religious and ethical impulses.

THE SCHOOL A PROPER PLACE FOR TEMPERANCE INSTRUCTION

The only question that arises is whether it is the place of the school itself or of the teachers in their official capacity to include the support and promotion of the temperance movement in their professional work. This question I would also answer most positively in the affirmative, calling also to mind the fact that the Prussian Minister of Education in 1902, in answer to a petition of the German Women's Union published an order that not a single public school should avoid taking a positive part in the struggle against the disastrous evil of alcoholism.

The causes of intemperance are many. Lack of judgment and lack of resolution will play no small part. The fight against intemperance is accordingly a matter of enlightenment and training in which the public school especially can take an effective part.

THE GAINS FROM BETTER SCIENTIFIC KNOWLEDGE

I recollect very clearly the controversies which took place in the eighties as the temperance movement again set in with renewed energy. In scholarly circles as well as among the people generally, alcohol was believed in not only as a care-breaker but as an indispensable strength-giver, as a valuable source of nourishment, and only to long years of many-sided educational work on the part of scholars, philanthropists, Good Templars and temper-

perance societies, is due the fact that the value of alcohol, and particularly its nutritive value, is more correctly estimated. Education, especially education of the young is necessary if intemperance is to be finally overcome.

Our young people must learn that disease prevented is better than disease cured, that nature acts according to unchangeable laws whose transgression is inexorably punished and that there is no sympathetic medium that can arrest the punishment. Hygienic instruction adapted to training the young in a rational conduct of life is necessary in the school, if it is actually to fit them for life.

HIGH IDEALS AS PREVENTIVES OF INTEMPERANCE

Not only lack of judgment and will, but also lack of finer sensibilities, are fertile causes of intemperance. Men must have pleasure and if they do not enjoy what is pure and beautiful, they take to what is less beautiful and evil.

And there I see a field for a special reform movement inaugurated by artists and teachers of special fitness and earnest zeal. Unlock the school doors and open the senses and heart of our youth to art, poetry, singing, painting, and modeling. Let art henceforth be not a thing of luxury for the few well-to-do, but a necessary thing for all receptive natures whom it is possible thereby to rescue from the cares of daily life, to lift out of the routine everyday pursuits with their hurries and worries to the plane of unclouded, disinterested pleasure and receptivity.

Education in art is nothing less than the broadening, deepening and ennobling of the personal life of our children by making them susceptible to the exalted form-language of art.

An intelligent people, trained to noble aims and sturdy industry is fitted for rational living in economical, aesthetic and ethical directions and does not fall into danger of giving itself up to alcoholic intemperance.



PROBABLY BLUE-BLOODED, TOO

Mrs. Waldo (of Boston)—"I have a letter from your Uncle James, Penelope, who wants us to spend the summer on his farm."

Penelope (dubiously)—"Is there any society in the neighborhood?"

Mrs. Waldo—"I have heard him speak of the Holsteins and Guernseys. I presume they are pleasant people."—*Christian Endeavor*.

Two Great Public Scourges

The coincidence of alcoholism and tuberculosis has been noted by many medical observers. Dr. Jacques Bertillon of France has conducted investigations on the co-existence of the two diseases, some of the striking results of which are given in this article translated from *Massigkelta-Blatter*, Jan. 1910.

THE alcoholic is less resistant than the sober against the destructive attacks of consumption, and addiction to drink rapidly advances the progress of that disease. A hundred thousand deaths occur yearly in France from tuberculosis, a hundred thousand persons cut off in the best years of their life. In Paris alone, two-thirds of the 8,900 who die between 20 and 40 years of age, are victims of this disease.

Not every one, of course, is exposed to the danger in the same degree. Occupation plays a large part, and in the frequency of consumption there is a striking difference between the calling of the liquor-sellers and that of the merchants, who in many respects are placed in similar conditions. One important difference, however, is that the saloon-keeper lives in an alcohol atmosphere from morning to night and is in constant temptation to drink.

Statistics, which neither flatter nor detract, show the difference between the death-rates from tuberculosis in the two classes of callings at various ages from 25 to 65 years.

TUBERCULOSIS DEATH-RATE PER 100,000

Age	Merchants	Saloon-Keepers
25 to 35 years	214	465
35 to 45 years	245	579
45 to 55 years	244	403
55 to 65 years	201	242

In the prime of life, therefore, the probability of death from consumption is twice as great for the saloon-keeper as for the merchant. Not until more advanced age (55 to 65) do the rates approach each other, whether it is that as they grow older the liquor sellers become more discreet, or, what seems more probable, that those who have defied the injurious consequences of alcoholism in their younger years are later not disproportionately, at least, afflicted with phthisis.

HIGHER DEATH RATE IN OTHER DISEASES

But it is not to tuberculosis alone that the saloon-keepers are the more numerous victims; they are more subject also to most other diseases. The following table compared the number of deaths per 100,000 from various diseases among small merchants and saloon-keepers between the ages of 35 and 45.

Disease	Merchants	Liquor-sellers
Consumption,	245	579
Diseases of Nervous System,	33.8	210
Diseases of Circulation,	98.4	195
Diseases of Respiration,	139	318
Diseases of Liver,	33	210
Bright's Disease,	31.6	70.4
Accidents,	39.5	73.6
Suicides,	25.5	49.4

The difference in the rate of mortality from consumption between the two sexes is very marked, the rate being much higher among men than among women after the age of fif-

teen. At five and ten years of age, the rate is higher among girls. The following table shows the comparison based upon the number of deaths from tuberculosis in Paris from 1901 to 1905.

Age	Males	Females
5 years	45	58
10 "	47	100
16 "	275	261
20 "	431	345
30 "	542	400
40 "	821	413
50 "	862	704
60 "	645	229
70 "	573	227
80 "	220	80

During youth, while the use of alcohol plays no part except in cases of hereditary influence from drunken parents, the boys make a better showing than girls. But at 15, about the time when the boys begin to learn to drink their comparative death-rate from tuberculosis begins to be much greater.

A strong body resists the attacks of consumption to which all are more or less exposed, much better than a weak body. And among the causes of weakening, numerous and complicated as they are, the steady alcoholizing of the body is the most disastrous.

"The drinker is a sorry case", says the theorist, "but he injures only himself". This is an error. The consumptive expectorates innumerable bacilli and thereby injures his neighbors, particularly those who are susceptible to tuberculosis on account of bad physical condition, to say nothing of the hereditary consequences to the future generation.

This fact, that spirits is the chief cause of tuberculosis, provides us with the weapon for opposing them. Much more sensible than the proposal to tear down old city quarters and build new ones, more important even than the erection of luxurious hospitals, is the fight against alcoholism whereby we attack two of the greatest public scourges at the same time.

But when Bertillon recommends as the best means of combating drunkenness, the substitution of the wines of the south for distilled liquors, he advises taking a false path.

The leaders of the old German moderation movement thought to drive out spirits with the apparently harmless beer, and now we have to combat the beer plague as much at least as the whiskey plague.

He is not the wisest man who teaches his fellowmen what kind of liquor is the least injurious, but he who blazes the way for the opinion that alcohol is a dangerous and easily dispensable luxury and that, especially if used habitually, its maliciousness soon becomes evident.—Translated for the JOURNAL.

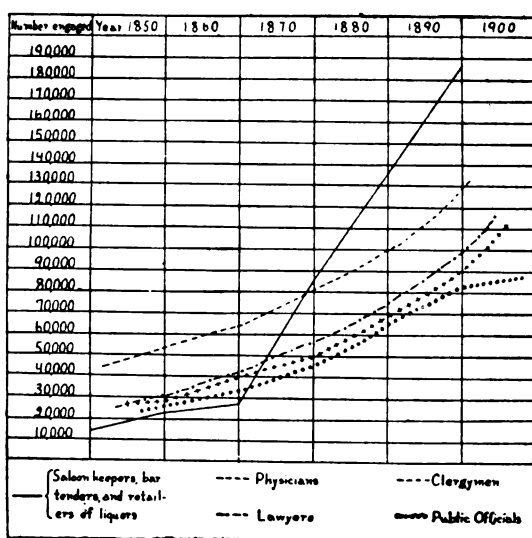
Fifty Years' Growth

BY REV. U. F. MUELLER, C. P. P. S.

THE tables given are compiled from the census report for the years named and are presented as an indication of the numerical strength of the retail business of dispensing liquors as compared with the number of those engaged in other occupations concerned with supplying the legitimate needs of man. (Reports for 1910 not available.)

Table I compares the increase in the number of persons engaged in certain professions with those engaged in retailing liquors. Physicians, lawyers, clergymen and various public officials vary little in their respective rate of increase; the most conspicuous fact is that in 1880 the liquor retailers and dispensers began to outstrip the professional men until

I



Increase in the number of liquor dispensers as compared with that of professional men.

in 1900 they exceeded physicians alone by 54,000.

In Table II the liquor dispensers are compared in numbers with tradesmen and other business men. Here in 1850 the grocers were in the lead but by 1890 were outnumbered by liquor dispensers by 22,000 and in 1900 by 30,000.

Butchers managed to keep ahead until 1870 when they began to fall behind to be ultimately outstripped by 73,000.

Bakers, though ahead in 1850 were outnumbered by about 40,000 as early as 1880.

The amount of intoxicants consumed has kept pace with the increase in the number of sellers as shown by Table III. Although the per capita consumption of spirits was on the

decline between 1860 and 1880 it has held its own since, while beer has risen to the enormous quantity of 16 gallons per capita per annum. (See table III on page 37.)

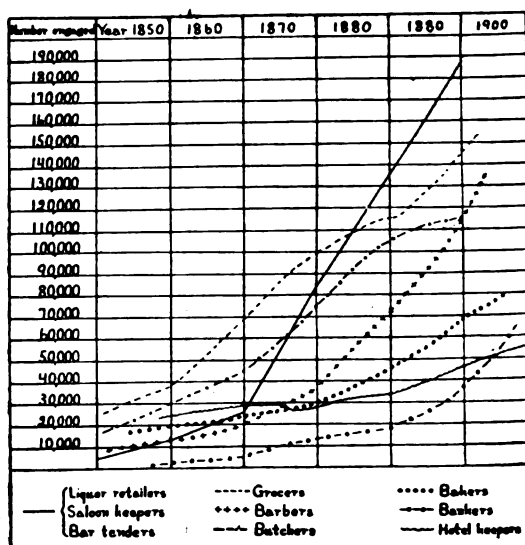
Further, if the amount of alcohol in spirits be estimated at 50 per cent., in wine at 10 per cent., and in malt liquors at 4.5 per cent., it appears from Table III that the consumption of absolute alcohol is practically unchanged so that the immense increase in the use of beer has not diminished the dangers from alcohol.

3

A Temperance Compayn

Rev. Francis E. Clark in an interesting article on the "Collective American" in *Leslie's Weekly*, has the following evidence to give on the sobriety of Americans. Few persons, perhaps, are better qualified by extensive obser-

II



Increase in the number of liquor dispensers as compared with that of business men

vance in travelling in all parts of the world to give evidence on this point. The "fellow passengers" in this case were 650 Americans on an around-the-world excursion.

No better chance did one have to study the collective American than on the Cleveland. He came from nearly forty different states. . . Many organizations, too, were represented. The Masons had a large delegation, and the Elks as well. Daughters of the American Revolution were much in evidence and nearly a hundred "Endeavorers." . . There were generals and colonels and captains to officer an army. We had local magnates galore, men who are of great importance in their own bailiwick be it large or small. There were thirty doctors and dentists, but only five clergymen.

There were rumors that a Standard Oil magnate let his light shine on board.

Those fellow passengers were a wonderfully temperate lot. Nine-tenths of them, I should think, were abstainers. In the great dining-room it was a rare thing to see even a bottle of wine or beer on the tables; and as for whisky and brandy, I did not see a single bottle appear at meal time. Out of three hundred Englishmen on such a cruise, two hundred would have had their whisky and soda at every principal meal. Out of three hundred Germans two hundred and eighty would have had their foaming steins of lager beer. Out of three hundred American men (we will give the ladies credit for the other three hundred and fifty on the Cleveland) two hundred and eighty had only a glass of cold water.

It is said that the chief steward of the Cleveland, which is a German ship, was very much distressed over the temperate habits of his patrons on this east-bound cruise, having laid in twenty-two tons of soda water in bottles to "qualify" the whisky, but little of which was demanded, besides 22,350 bottles of wine and 6,500 gallons of beer.

A Reform That Everybody Can Help

BY REV. WILBUR F. CRAFTS, PH. D.

THERE is no one method of promoting reform in which so large a number of people can effectively participate as that of writing letters. It is said that when *Collier's Weekly* was making its fight against drugs that are half whiskey, some one wrote the editor: "You are attacking whiskey by the spoonful in your editorial columns, and recommending it by the bottle and barrel in your advertising columns." To which the proprietor is said to have replied: "You have got a good one on us. We will stick to the fight against the drugs and put out the drinks." And the liquor advertisements, although commercially worth hundreds of dollars, were thereupon banished from that periodical.

We subjoin a long list of leading magazines that have the same policy, some of them because of similar letters. We shall be glad to add to the list any other magazines of the same class that are entitled to be in this roll of honor which we propose to send out widely, when revised to Y. M. C. A. reading rooms and others that are anti-alcohol.

It would be well if some one would make a list of prominent daily papers (all too few) that, like the Philadelphia *North American*, refuse liquor advertisements. And it would be interesting to have a list of weekly papers

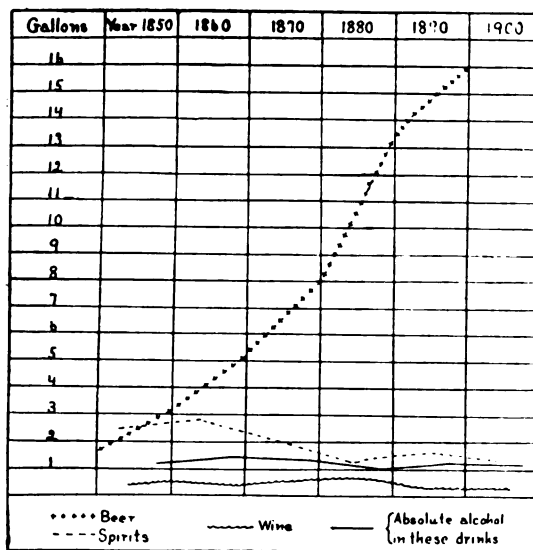
also, other than the religious and reform papers, which take the same stand.

We suggest that every one who believes that the drug habit and the liquor traffic are harmful to the race shall carefully look over those which he now takes before making his selection of magazines for 1911, and notify those which contain liquor advertisements that unless they are intending to turn over a new leaf in this matter with the New Year, the subscriber will have to change to some magazine that does not bring into the home deceptive invitations to indulge in poisonous beverages.

Mrs. Zillah Foster Stevens, Secretary of the International Sunday school Temperance Department, is said to have learned from the publishers of the following magazines that they do not advertise liquors:

"All Story," "American Boy," "American Magazine," "American Review of Reviews,"

III



THE INCREASE IN THE USE OF BEER HAS NOT DIMINISHED THE DANGERS FROM ALCOHOL.

"Arena," "Argosy," "Century," "Circle," "Collier's," "Country Life in America," "Current Literature," "Delineator," "Designer," "Everybody's Magazine," "Garden Magazine," "Good Housekeeping," "Housekeeper," "Housewife," "Ladies' Home Journal," "Ladies' World," "Literary Digest," "Living Age," "McClure's Magazine," "Modern Priscilla," "Munsey's Magazine," "New Idea Woman's Magazine," "New England Magazine," "Ocean," "Outlook," "Railroad Man's Magazine," "Saturday Evening Post," "Scrap Book," "St. Nicholas," "Suburban Life," "Success Magazine," "Uncle Remus's Magazine," "Woman's Home Companion," "Woman's Magazine," "World To-day," "Youth's Companion."

Childhood's Martyrdom

BY FRANZISKUS HAHNEL

[The following article appearing in the last number of the journal of the German Abstaining Teacher's Society, is an appeal for more active effort on the part of the members of that organization for the relief of the suffering endured by the children of drinking parents.]

The conditions which called forth the appeal are not peculiar to Germany. They exist throughout Europe and America, as the newspapers in all these countries abundantly testify. Only the names of the places differ; the stories in all essential details are duplicated wherever helpless children are at the mercy of parents brutalized by drink. Prof. Hahnel sees how teachers could work to relieve some of this suffering, and his appeal is as fitting for and calls for as active a response from teachers in America as in Germany. France or any other country where the same conditions prevail. The article, somewhat condensed in translation, is given below.]

THIS paper has often emphasized to the lives of the pupils committed to teachers the necessity of removing from their care everything that stands in the way of the educational work. As teachers we [of this organization] abstain from alcohol because we realize that only by so doing can we impress upon the young, with all the strength of our own conviction, the warning, Beware of intoxicating drinks.

The inquiries our society has instituted, like those by school officers and teachers of many cities, have again and again brought out the fact that a greater part of the youth of our times must do homage to the use of alcohol because the present drinking customs compel compliance, because the ignorance among all classes of people in our fatherland is still so great, because, more than all else, our teaching profession is not yet sufficiently aroused to give effective warning and admonition. The feeling of responsibility in our own ranks needs to be more generally awakened.

We are yet a long way from the Child World (*kinderland*). In spite of all our care of the young, in spite of the strenuous exertions of well-meaning societies and officials, we are not yet in "the country of the child", and we shall not be as long as alcoholic drinks are allowed to play the smallest part in the life of the young.

It often seems to me as if we pursued what is the generally called the ostrich policy. We close our eyes to the suffering of the children. We stop our ears against the horrible tale of the national statistics.

Every year 450,000 infants fall as dead blossoms from the German tree of life. In Bavaria, for instance, out of 450,000 infants 6,500 are born dead, and 69,000 die during the first year of life. Tens of thousands of mothers in the beer-land of Bavaria see themselves cheated of their fond hopes, thrown into the deepest sorrow. From an exact count of 20,008 children belonging to 5,845 families, the well-known investigator, Prof. Laitinen, has shown how seriously even moderate drinking on the part of parents affects their children.

If only we could get rid of alcohol in Germany, our infant mortality would strikingly decrease, as to that there can be no difference of opinion. Norway proves it to us. Before

the temperance movement gained such headway 300 out of every 1,000 children died there during the first year of life, as is the case today in Bavaria; now, infant mortality in Norway has fallen to between 80 and 90 per 1,000. That shows that a new and healthy generation is coming up.

A terrible tale of children's misery is told by the last report of the German Central Society for the Care of the Young. There are reported 1,695 cases which were sent to them by the courts, police, clergymen, physicians and societies, and the 1,695 cases represent so many child tragedies played in the midst of the great city without the public knowing anything about them.

The drunkenness of their parents was the immediate cause of the application for care in 117 cases, but in all the reports of ill-usage, prostration, immorality, crimes, etc., alcohol is always the inciting or direct cause.

Is all this child misery nothing to you, German teachers? Shall it be said of you that you have no desire to help? The trouble is, people do not understand even in our own ranks that it is still darkest night. As long as our associates are not themselves free from the prevailing views in regard to drink they will be unable to comprehend the misery of the children, or that teachers can do a great deal to alleviate it if they will.

Day after day, the newspapers tell of suffering that cries to heaven. For two years I have collected as much as I could from the daily papers concerning the influence of alcohol upon family life. Before me now lie hundreds of clippings on the subject of "Child-Suffering and Alcohol". Between April first of last year and April first of this year there were not less than 183 reports similar to the following which are certainly only a small part of those occurring in our country, many of which never reach public knowledge.

"Schleswig-Holstein Volkszeitung, Jan. 13, 1910. Consequences of Alcoholism. A few days ago, a fight occurred in the "standing beer hall" of Kell, in which a father who had seven children to support got his leg broken."

"Bavarian Courier, Munich, Jan. 21, 1910. Notes from South Bavaria. As a result of over-indulgence in alcohol a wagon-waker of Neustift pounced upon his only child, an eight-year-old girl, pulled her from the bed and threw her out of the window."

"Dusseldorf Daily, Feb. 10, 1910. The Martyrdom of Two Children. A woman living on Loretto street was sentenced by a justice to a week in prison for

inflicting dangerous bodily injury. As the woman appealed against the sentence, the matter was brought before the court where the evidence taken showed that she was given to drunkenness and was the mother of several young children. Two of these, an eight-year-old boy and a twelve-year-old girl were continually maltreated in a most brutal manner. Kicks and blows with a leather strap were an everyday occurrence. The woman struck regardless of where the blows fell, and the screams of the misused children filled the whole neighborhood. Besides, during her daily abandonment to drink the children were shamefully neglected, and when the neighbors remonstrated she replied that she did not care what became of them. The twelve-year-old daughter remained away from the house all day because she was afraid to come home, but early in the morning the beating began. Finally, the authorities interfered and the children were taken away from the unnatural mother."

How can one's heart beat quietly while such things go on? Yet thousands read of these occurrences day after day without being moved by them.

According to a careful enumeration, we have upwards of 400,000 alcohol-sick men, "drinkers" according to the usual term. 300,000 of them are married; and have, all told, about a million children.

I will not dwell upon the enormous num-

bers who are in asylums as idiots, epileptics, feeble-minded, cripples, etc. But from the mournful eyes of these children comes the constant reminder that alcohol was in a large number of cases the spoiler, alcohol which the state allows to be retailed in city and country with high official approval, and the sins of the fathers are visited upon the children to the third and fourth generation.

Truly we are yet a long way from the Children's World. If we would find the way to it we must first make an inexorable, untiring fight against intoxicating drinks.

Upon us, members of the German Society of Abstaining Teachers, lies the duty of calling into this battle others of our profession, by hundreds and thousands. We have to make good to the children of the future for the sins that have been committed upon the children of the past. Let us have tens of thousands of abstaining teachers who will be so many combatants declaring war to the knife upon the allies of child suffering.

Controverting Science

BY E. L. TRANSEAU

THE attitude of the brewing industry toward the scientific study of alcoholism is well shown by a remark in a recent number of the *Brewer's Journal* concerning the Exposition of Alcoholism which is to form a part of the International Congress on Hygiene in Dresden, 1911. This section is in charge of Prof. Max Gruber, President of the Royal Hygienic Institute of Munich, assisted by other scientists of high rank.

The correspondent of the *Brewer's Journal* says that the majority of those in charge of this section are "teetotalers and idealists," and adds:

"It will be well for the trade in all countries to send representatives to that congress to prevent it from being proclaimed as an aggregation of scientists whose judgment might be taken seriously, if proper measures be not taken to controvert it."

A glance at the list of these "scientists" whose judgment is to be "controverted" by the brewing trade, reveals such names, in addition to that of the director, Prof. Gruber, as the following: Dr. Gonsler, Counsellor to His Majesty the King of Prussia; Prof. Kraepelin, Counsellor to the Royal Court of Bavaria, and Professor of Mental Diseases in the University of Munich; Prof. Moeli, M. D., Privy Councillor, Berlin; Prof. von Bunge, M. D., of the Chair of Physiological Chemistry in the University of Basle; Dr. Herod, professor in the College of Lausanne; Prof. Laitinen of the

University of Helsingfors; Dr. von Strauss und Torney, of Berlin, Chief Counsellor of the Supreme Court of Prussia and President of the Senate of Administration; Prof. Weichselbaum, Counsellor to His Majesty the Emperor of Austria, a leading anatomist and for many years professor in the University of Vienna.

It will be interesting to see how the brewers will attempt to controvert the judgment of these men. At first thought one might suppose that it would be useless for them to make the attempt, but a glance at the page advertisements of the large brewing firms in leading daily newspapers shows how such contradictions get a hearing. Money buys the space that will fall under the eyes of people who have no knowledge of the subject and no scientific training which would lead them to challenge statements unsupported by or out of harmony with existing evidence.

A striking example of this method is furnished by a page advertisement in a large Chicago daily which contains a dozen or more subtly planned statements, each intended to win favorable opinions for beer, regardless of the opposing evidence.

For the sake of those likely to be influenced by this mercenary juggling with scientific truths concerning beer, it is important that the misleading assertions be met by widely promulgated statements of the corresponding facts.

THE ALCOHOL IN BEER NOT INCONSIDERABLE NOR HARMLESS

The beer advertisement asserts, that:

"Beer contains so small a percentage of alcohol as to render it absolutely harmless when taken in moderation."

Accepting the minimum percentage of alcohol so far claimed by the brewers, $3\frac{1}{2}$ per cent., and the minimum interpretation of moderation as not less than one glass a day, more probably from three to four glasses, which is the brewers' estimate of moderation, it is easy to compute the amount of alcohol the drinker gets in his moderate allowance of beer.

One ten-ounce glass of $3\frac{1}{2}$ per cent. beer would furnish 35-100, a little over 1-3 of an ounce of alcohol, or $10\frac{1}{2}$ grams, the measure usually employed in laboratory work. Two glasses would furnish 2-3 ounces, or 21 grams; three glasses, one ounce, or 30 grams of alcohol.

Very exact tests have been made of the effects of these quantities of that drug. The amount in one glass, ten grams, has been found to lower both muscular and mental working ability during the time of its influence (experiments of Destree and of Kraepelin). It has also been shown to impair for half an hour or more the ability to distinguish between the loudness of sounds (Specht).

Less than the amount of alcohol in two glasses of beer, as little as 14.7 grams, measurably reduced the muscular power of Dr. L. Schneider in a series of experiments carried out with Prof. Paul Dubois at Berne, Switzerland (1903). Dr. W. E. Dixon has found by experiment that the heart is depressed when the blood contains a percentage of alcohol equal to what would be thrown into it by $22\frac{1}{2}$ grams, a trifle over the amount in two glasses of beer.

The amount of alcohol in three glasses of beer, 30 grams or one ounce, has been tested in various kinds of head and hand work and found to impair them all. One very exact and interesting experiment in writing reported by Dr. Mayer (Heidelberg), showed a retardation of over 7 per cent. in the time required for writing certain letters of the alphabet after taking this amount of alcohol.

A very practical application of the facts obtained by these exact laboratory investigations was made by the railroad manager who said to an engineer, "If it takes ten glasses of beer to make a man drunk, when he has had one glass he is one-tenth drunk."

Instead, therefore, of being "absolutely harmless," beer used in the strictest moderation furnishes enough alcohol to injure a man at a very vital point—his money-earning power.

DRUGGING IS NOT NORMAL STIMULATION

"But beer contains enough alcohol to produce that mild form of stimulation and exhilaration which the human system craves," continues the beer advertisement.

Drugging the brain with a narcotic which first excites and then depresses, is not a normal fulfillment of the natural desire for inspiration or exhilaration. The effect produced by a glass of beer is a drug effect, a dulling of the higher centres which causes relaxation of control, and a consequent brief stage of excitement, followed quickly by heaviness.

"Whenever alcohol promotes sociability and loosens the tongue" says Dr. Forel, "it is the result of brain intoxication." A more general knowledge of this fact is needed to correct the widely prevailing opinion that a man is not intoxicated as long as he can walk.

A properly conducted life finds many opportunities for receiving uplifting inspiration or normal mild stimulation without the evil consequences that follow trying to counterfeit these sensations by the use of a drug.

THE CLAIM OF ABSOLUTE PURITY

"Beer is absolutely pure, being entirely free from disease-laden germs so frequently found in milk and water," boasts the advertisement. "It is one of the beverages that can not be adulterated or tampered with from the time it leaves the manufacturer until it reaches the consumer."

And yet, at a meeting of a Brewing Society in Chicago, March 17, 1910, a long paper was read about what happens to beer between the brewery and the consumer. The following are some of the happenings: (1) Faulty or dirty packages; (2) faulty "pitching" which leaves spaces for impurities that sooner or later get into the beer; (3) careless handling which may also loosen some of the "pitch"; (4) metal turbidity caused by the "cooling coils" made of tin in the retailer's place; (5) steaming or boiling out the coils is liable to "bake" on the impurities which later flake off in the beer; (6) impure air is frequently carried into the beer from the ice box or basement when the beer is pumped by air or water pressure from these storage places to the consumer's glass; (7) the water pressure pumps may leak, and air and water both be forced into the beer; (8) the rinsing of the glasses after use may not be inviting when "the glass disappears behind the bar and is rinsed in water of indescribable condition."

With bottled beer troubles also occur. "With all due care," says this brewing instructor, "every brewer may have unpleasant experiences, due to faulty closing or capping devices, faulty glass, or handling in transportation. Metal turbidity may be produced by

the action of salts on the tin or iron either from the pipes used in the bottling department, or from particles adhering to the bottles after leaving the soaker and washer."

These impurities may not be of great consequence, but they do not warrant the dogmatic claim that beer is "absolutely pure."

It has been repeatedly shown (by the Committee of Fifty and others) that the impurities or adulterations in any alcoholic liquors are of very small importance compared with the ever present poison—alcohol. That is the ingredient which causes the slow, chronic intoxication of the body known as "alcoholism."

TEA AND COFFEE DRINKING DO NOT BURDEN THE TAX PAYER

"Beer does not contain caffeine, as does coffee, nor tannic acid, which is peculiar to tea," continues the advertisement. If beer only did contain these substances *instead* of alcohol, the brewers would be as free from what they term "persecution" as are the tea and coffee producers. Mints of money would not be needed to buy up newspapers, press, type, and ink-pot, to defend their wares. Judges are

increasing in the growth of organic, nervous and mental diseases, inebriety, etc. This increase of alcoholism keeps step with the increasing use of beer.

WHAT BECOMES OF NUTRITIVE MATERIALS

"Beer is made from selected materials high in their percentage of nutritious elements," asserts the beer advertisement; but it says nothing about the destruction of those nutritious elements during the processes of brewing which converts the former food substances into the poison, alcohol.

THE "LIQUID-BREAD" DECEPTION

"Beer has been very appropriately called 'Liquid-bread'" says the brewer's page. "One quart contains one-tenth to one-fifth pound of dry substances, consisting of albumen, nutritious salts, especially the all-important phosphates and extract of malt."

The propriety of calling beer "liquid-bread" may be judged by the following comparison of the constituents of bread and beer, ascertained by exact analysis and published by the Committee of Fifty ("Physiological Aspects of Liquor Problem," Vol. II, p. 342.)

Water	Indigestible Nutrients	Food Material Protein, Fat, Carbohydrates, etc.	Ash	Alcohol
Bread 36.3 per cent. Beer 89 per cent.	2.9 per cent. .2 per cent.	61 per cent. 6 per cent. (Extractives)	.8 .3	0. 3.5

not saying that 90 per cent. of the crimes coming before them are due to tea and coffee; the public is not taxed to build institutions for the cure of tea drunkards, or asylums for the insane, feeble-minded, epileptic, and indigent victims of coffee.

PHYSICIANS UNITE TO CONDEMN IT

"Beer acts as a tonic, and for this reason has received the hearty indorsement of leading medical and scientific authorities the world over," announces the advertisement. But it can not boast of state, national and international societies of physicians banded together to promote the use of beer, as there are to combat it and all beverages containing alcohol.

THE CONSPICUOUS PRO-BEER ECCLESIASTICS

"Eminent ecclesiastical authorities have long recognized beer as an important factor in the world's campaign for temperance," is the other leg of this prop.

Ecclesiastical gentlemen who use this argument are conspicuous for their singularity as well as for their ignorance of the historical fact that where the experiment has been tried the people have found themselves saddled with a beer plague as pernicious as the whisky evil. This is the experience of Germany, Belgium and England, the leading beer-drinking countries of the world. Instead of a decrease in alcoholism, they see the marks of its ravages

This analysis shows no warrant for crediting a quart of beer with "1-5 pound of dry substance consisting of albumen, nutritious salts, etc." All that can be credited with nutritive value is the 6 per cent. of extractive matter, largely dextrine, and in a quart of beer, weighing about 2.12 pounds, this extractive would amount to only .127 of a pound or 2 ounces. The "all important phosphates" are present in the remarkable proportion of 32 per cent. of the ash, which in turn constitutes 3-10 per cent. of the beer. A glass of beer, therefore, would furnish 32-100 of 3-1000 of 10 ounces, or a little less than 1-100 of an ounce of phosphoric acid.

The nutriment in the beer moreover, would cost from 12 to 15 times as much as the same amount in the form of bread. That is, 1 five-cent loaf of bread weighing from 12 to 15 ounces furnishes 7.32 to 9.15 ounces of nutriment; 1 five-cent glass of beer, 10 ounces, furnishes 6-10 of an ounce of nutriment. The same money spent for bread, therefore, buys from 12 to 15 times as much nutriment as it does when spent for beer.

But even if beer contained more nutriment than the brewers claim so long as it also contains a poison which the history of the world has shown to be an enemy to mankind, so long it must be denounced and measures taken to protect society from its evil effects.

Scientific Temperance Journal

Founded by Mary H. Hunt

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered as second class matter June 1, 1909, at the postoffice at Boston, Mass., under the Act of March 3, 1879.

"Be kind;
The whole creation groans in anguish sore;
Lay not a finger-weight of sorrow more
Upon the suffering heart of man or beast;
Bind up the broken-hearted, help the least;
A mission for our love we all may find;
Be kind."

Responsible Majorities

A GOOD deal of fervid oratory is expended in pre-election period on the subject of the majorities as the controlling element in popular government. As a matter of fact the power of majorities in government lies not merely in a numerical but still more in a responsible strength. Mere numbers do not necessarily represent the conviction founded on well understood principles that is needed to ensure the continuance and progress of public welfare. Some of the worst scenes of the French Revolution were expressions of the will of majorities. Intelligence as to the issues involved in any question, acceptance of responsibilities involved in making a decision upon it—these are the characteristics of the majority, decision that signifies real progress.

Whirlwind campaign for legislation often leaves emptiness and disappointment in results unless it has been preceded by the slower, less spectacular but fundamental work of education in the particular principles involved. There is no royal short-cut in social reform.

It is true that legislation whether on the alcohol question or any other social problem is often educational in its results. Bits of advantage are gleaned and added to the store of experience and observation. It tests the majority responsible for it as to whether moved by firmly grounded principles or by the passing excitement of a stirring campaign. It is apt to reveal the weak spots in previous educational work.

In the main however, the secret of progress by the will of the majority lies in thorough, systematic unceasing education of all the people in those facts and principles from which the social fabric must be woven.

The True Function of The School

IN one of the large cities there is a school located in a district which is the seat of the brewing industry, where many parents use drink, and where representatives of philanthropic organizations find there is a serious increase of the drinking habit among women. The school occupies a vantage point of opportunity for teaching the children the dangers of the habit which permeates the home and social life but has adopted the policy of "glossing over" the temperance teaching because "so many of the parents drink the child should not be taught that it is a crime for his father to drink."

It would seem as if the fallacy of this reasoning would be evident to anyone who has ever given the subject one moment's serious consideration. It rests upon an erroneous conception of the viewpoint for this teaching. It is never necessary or desirable to teach the child that it is a "crime" for the man to drink, although in the strict sense of the word in the light of modern knowledge the term is not far from correct. But the function of the school is to teach the child the facts—what drink may do to man and his usefulness in the world—not to criticize the man who has formed the habit.

This is precisely the point at which the physiological fact has the advantage in training the child to sobriety. It is the point of view held in teaching all other aspects of hygiene. The same parents who violate hygienic law in the use of alcoholic beverages, undoubtedly violate a dozen other hygienic laws daily, yet the school finds no difficulty or shows no hesitation in teaching the children better. Make the instruction impersonal; teach the truth fearlessly; appeal to the child's ambitions and pride and as he grows older, to his social responsibility. If the question of parental use of alcohol is raised by the child himself, it can always be met kindly and frankly with the statement that when our fathers and mothers were children, many of the facts about drink which we know today had not been found out, or the parents had not had opportunity to learn them. If the child persists that the habit does his parent no harm, tell him of the delicacy used in making the experiments which have found out the real effects of drink and make it clear that we, un-

trained in observation, can no more judge correctly of the real effects than we can of many other matters. To the untrained, for instance, the moon looks only a few feet across, the sun appears to set, the snowflakes do not show their true form except under a microscope. So we with imperfect knowledge cannot always be sure that our observations are correct.

It is of the utmost importance that the school get the right viewpoint in this matter. Certainly it has no right to shirk its responsibility and lie down under a difficulty which is not considered a handicap in any other branch of education.

The Perils of Drinking and Gambling in Building a Career

BY FREDERICK A. ATKINS

THE man who is trying to build a career ought to be told that out of six failures at least three are due to drinking and gambling.

There was a time when few men gave up drinking except under the compulsion of high moral principle. But today athletes are discovering that it is impossible to break records on beer. Insurance companies, influenced by nothing but the inexorable logic of figures, find that total abstainers furnish better business than the most moderate drinkers; and thousands of shrewd business men, who do not care a brass farthing for any temperance crusade, have quit drinking for the simple reason that in the stress of modern competition they need a clear brain and a steady hand and complete control of all their faculties. They say that the fear of a blotchy face has drawn more young men from drink than all the temperance lectures, and it may be.

So if any youthful reader is addicted to gambling, I will not tell him that it is wrong and foolish; I will suggest that it is probably shortening his life.

Does gambling, then, lead to physical degeneration? That is the deliberate opinion of many experienced doctors. Sir B. W. Richardson used to say that all professional gamblers had weak hearts. The intoxication of gambling is quite as bad as that which follows a drinking-bout. It weakens a man's will, leads him to neglect his business, fills him with wearing anxiety, and when he loses, tempts him to steal. It is true that there is excitement in legitimate business, but it is not so chronic or so maddening as the desperate fever of the gambler. The tormenting anxiety of gambling quickens the heart-beats; the overworked heart is weakened; health is destroyed; and

very often life is shortened. Avarice, with all its fret and fury, not only blunts the finer feelings and leads to moral decadence; it also narrows the mind, squanders the nervous energy, and enfeebles the body.—*Christian Endeavor World*.

Science The Handmaid of Religion*

BY GEO. J. FISHER, M. D.

Secretary Physical Department of International Y. M. C. A.

THE chief function of the Sunday school in the teaching of these extra Biblical subjects [those related to health, efficiency and purity], is to make the spiritual application not to teach the scientific facts. But in many subjects the only method of instruction is the scientific method. We must build up our instruction upon the scientific basis and scientific facts. This is absolutely true, for illustration in the teaching of temperance. The old methods of teaching total abstinence have not availed for the reason that they did not have their basis in accurate facts. To say to every boy that if he touches one glass he will become a drunkard does not convince him for he may know many who take more than one glass and are not drunkards. But if you can show that even moderate doses of alcohol are injurious by interfering with quick thinking, with ready action and steady nerve control, your proof will be exceedingly convincing, when you add to this and base upon it your spiritual application.

The Bible abounds in frequent utterances in reference to diet, temperate living, continence and physical exercise. There can be given practical application and a fund of scientific material is available which can be used for this purpose. To this end the teacher should keep in touch with those agencies which provide material for such subjects as, for illustration, the SCIENTIFIC TEMPERANCE FEDERATION on *temperance*, the American Society of Sanitary and Moral Prophylaxis of New York on sex hygiene, the American Health League of New Haven on health facts and the Health Education League which issues health pamphlets. We must combine the love of science as Dean Hodges says, with the love of man.—*North Adams, Mass., Evening Transcript*.

*From an address on "The Teaching of Personal Hygiene in the Sunday School," given at the Twenty-first Annual Convention of the Massachusetts Sunday School Association.

TIME BY THE FORELOCK.

Scientist—"We Americans eat too much."
Ordinary Citizen—"Yes, we see the cost of food going up so fast that we feel there is no time to lose."—*Ex.*

Class-Room Helps

Conducted by Ethel M. Mills

The Story of The "Clean" Smile

TEACHING THE CARE OF THE TEETH IN INTERMEDIATE GRADES

OUR visitor," said Miss Loren to her forty sixth-graders, "is interested in the good care of the body. Let us all give her a 'clean' smile."

Thereupon forty wide and dazzling smiles showed what appeared to be forty sets of fine white teeth.

"There are now only four or five pupils who have unsound teeth" she said with satisfaction, "and I think they will be attended to soon."

"How did you do it," asked the visitor, "other teachers would like to have the secret".

"But it seems almost too simple to tell," she replied. "However, I will tell you and you may pass it on if you like."

"Always, you know, there are some gigglers in school. I wait a little and the first time giggles interfere with some thing the children wish to hear or spoils a good time, I seize the opportunity to convince the pupils that they themselves suffer annoyance from the giggling and it interferes with work, therefore it ought to be controlled; and, then I use it as the beginning of my lessons on the care of the teeth.

"We discuss the question of smiles and they suggest different kinds of smiles such as the sad, patient smile of the sick child, the bright smile etc., and, of course, we note that it is pleasant to see sunshiny faces. When the children can think of no others, I say, 'I know of a smile you have not mentioned.' They cannot guess it. Then I tell them it is the 'clean' smile.

"What would make a clean smile. We decide that it is different from all the others and that only a clean mouth with white, clean teeth can enable one to give a clean smile. How many will plan to give me a *clean* smile in the morning? In the morning some have forgotten but a number have scrubbed the teeth and three or four of those having the very cleanest are honored by being asked to come to the front of the room and smile widely at their little mates. All who can are asked to welcome the nurse or the master with a clean smile and tooth brushes flourish. This is a new and picturesque way of getting at it.

"Presently some of the children report that although they have brushed and brushed, their

teeth won't come clean enough so they wish to smile." (Their teeth are unsightly from discolorations or decay.)

"This is the next point for which I have been waiting. We study our books, look at the pictures and try to find out all about teeth. I sketch teeth on the blackboard and explain their structure. Each child counts his teeth with his tongue. Let us see what causes teeth to discolor.

"One cause, we learn, is cigarets and smoking may injure the teeth as well as discolor them.

"There is another and more common condition. On one of the teeth I have drawn! make a tiny point to represent a cavity. It might start from a little break in the enamel where some careless child bit a thread or some hard substance. Particles of food settle on this roughened place; it is very warm in the mouth, bacteria grow and multiply in the particles, they decay and an acid is formed that eats into the tooth. Now that the strong enamel is broken, the acid from more particles of food keeps working and the cavity in the tooth grows deeper and deeper. Candy and very sweet foods are worse than others.

"The hole is deep now, so deep that it allows the soft pulp containing the nerve to be injured (show on drawing), and then there is a dreadful toothache and perhaps a swollen face.

"But even though the enamel is not broken, if the teeth are not cleaned the bacteria are at work, the food particles left after eating, decay and after some time the acid eats a hole into the tooth. It doesn't all come at once. Indeed it comes so slowly that perhaps you can't believe it will come at all, but it surely will. If nothing is done to stop it, the crown of the tooth may go to pieces, the roots become sore and ache and have to be taken out by the dentist, a very painful operation, as perhaps some of you already know. There is only one way in which we can save ourselves all this pain and loss. If, as soon as we find a cavity started, we go to the dentist he will fill it without hurting scarcely any and the tooth will be almost as good as it was before. The longer we neglect it the more it will pain us.

*Prepared from notes obtained from a successful

Boston teacher whose school was visited.

"But the unsightly looks of the teeth and the pain are only a part of the mischief. Are our teeth given us mainly for ornament or are they very useful, even necessary to our good health? How long must these last you? We learn the very great importance of chewing the food properly and how the loss of even one tooth hinders this process. We pay special attention to the sixth-year molars because we know they are important grinders and will not be replaced if lost. Also, if they, or indeed any others, are lost there is a great probability that those beside them which are partly kept upright in their places by those next to them, will lean over sideways so the chewing surfaces do not strike those opposite to them properly. This is a very serious matter. (Sketches of the teeth with their roots in position and then with a tooth out make this clear.)

"Now that we understand the structure of the teeth, what causes them to decay, that tooth decay means pain and often loss of teeth and impairment of good looks, and so of health, we are ready to learn particularly how to care for them. We know now that decay is chiefly due to bits of food left on the teeth so cleanliness must be the great means of prevention. We learn how and when to brush the teeth inside and out and on the chewing surfaces and how to use the dental silk and the wooden or quill tooth-pick and why pins are taboo.

"Some of the children have no brush and powder and they are instructed to ask their parents or perhaps an older brother or sister for these necessary things.

ESTABLISHING HYGIENIC HABIT

"Now it remains to follow up the tooth cleansing till habit is established and to get the cavities filled.

"Every day I questioned the children to find out how many had brushed the teeth, varying the form as much as possible. (This was also an exercise in morals for I carefully taught them that while it was desirable to have cleansed the teeth and to have the good opinion of one's mates, nothing could be so important and praiseworthy as to be entirely truthful.)

"One day I ask how many can give me the 'clean' smile and then have three or four of the cleanest go before the class. This gives an opportunity to encourage some who may have had to work specially hard. Another time I tell them that each who cares to do so (always there is the condition of fitness) may give a clean smile to his neighbor across the aisle, or to the one in front of him. If careless Tommy Jones sees the shining ivories of Mary

Smith he has a double object lesson; he feels the shame of uncleanly habits and the beauty of cleanliness is impressed upon his mind. He registers a resolution not to get caught that way again. We always greeted the master and nurse and usually the visitors with a 'clean' smile and the children thus felt themselves liable to be called to dress parade any time. The lapses grew less and less and during the latter part of the year we had 'muster' twice a day. The time came when some of the pupils scarcely felt it proper to give the 'clean' smile after lunch unless they had brushed the teeth afterward.

PROBLEMS OF CONSERVATION

"But the problem of getting all the teeth filled, and of securing necessary extractions was more serious and all sorts of devices had to be employed.

"We urged that pain would come, the looks be impaired, that disease germs could lodge in the cavities and multiply and when food was eaten this unclean matter must get upon it and into the stomach and so germ diseases come; or we spoke of the busy little factories making clean saliva to help digest the food and then of its being made unwholesome by these diseased teeth. It gave the breath a very unpleasant odor. I asked them to take a glass and look for themselves to see whether they wished delicious food to pass over such teeth. A specked apple placed in contact with a sound one showed how a carious tooth is likely to cause the sound one next to it to decay.

"Of course there were cases of neglect in mothers almost too busy or too ill to take the children to a dentist and often the expense was a serious item.

"Sometimes when the necessary work was delayed, I selected the worst tooth and asked the child to show it to his parents and ask them to have just that one, so very needy, attended to. Often when that was done the others were cared for too. If not, after a time the most needy tooth remaining was pointed out and treatment asked for.

"When necessary I went to the homes and explained the needs of the child, met the objections as best I could and by using all the tact possible, secured some results. In one case, the older sisters who were working were persuaded to deny themselves a good time or two that little sister might have the teeth saved. When necessary I called out my reserves, the nurse, to visit some home and she would get the parents started or make arrangements to take the child to the dispensary for free treatment. It was considered quite a serious matter when the nurse had to take a case in hand.

"One child's teeth were really in a shockingly unsanitary condition and nothing had availed to secure a change. At last I examined them and spoke very seriously about it and said he must go to the nurse and see what she would think of such a mouth. Then I privately explained matters to her and asked her to show how shocked she was. Accordingly when the child showed himself she threw up her hands in horror. What a dreadful state of things! Could it be possible that any child could be found in such a condition! The mouth must be attended to at once! It was.

AN EXAMPLE IN SUBTRACTION

"Another incorrigible case was that of a wilful little girl who had two temporary teeth which, not having been extracted at the proper time, had been crowded to one side by the permanent teeth, were now unsightly and badly decayed and, of course, threatened the sound teeth. Neither the teacher's pleadings

nor the mother's authority were effectual in securing the extraction of these teeth. Strategy, however, conquered. The little girl was so bright in arithmetic that she had not during the term passed in a paper in which all the examples were not done correctly. I commented on this and then said, 'I am going to give you an example in subtraction for your home work tonight. It is a hard one and I just guess you can't get it right.' 'Yes I can,' said the child, confident in her record. 'All right', I said. 'Count your teeth and see if you can subtract the right number to leave twenty-four, just what you ought to have.'

"The next morning the child proudly showed the correct answer. The two unsightly teeth had been 'subtracted'.

"And so by one means or another, almost every child in this room has sound teeth and has formed the habit of caring for them, is ready to give the 'clean' smile."

Some Lessons from a New York Fire

HOW many ever paid a visit to the engine house, or saw the firemen on their way to a fire or saving a burning building? What kind of men must firemen be? (Well-grown, strong and brave and have good lungs.) How many boys think they would like some day to be a fireman?

A short time ago there was a fire, not a very large one, in New York City, but when the firemen went into the thick smoke to carry the hose where they could play the water on the fire and put it out, their lungs were so weak the men felt as though they were smothering; they got frightened, forgot their duty and actually dropped the hose and tried to run away. But because they lost their heads and because their lungs were not strong enough to stand the strain, several of them were suffocated and so lost their lives.

Now I suppose you have heard of many fires but you never heard of anything like that happening. What do you think was the trouble? I will tell you.

It seems that a number of boys in New York begin to smoke cigarets when they are quite young and as it hurts their lungs, their blood can't be well purified and so they do not always grow to be so large as they really ought. Some of these become firemen, such poor ones that Chief Croker, so the papers say, complains that the "cigaret-smoking, weak-lunged, under-sized firemen" injure the service of the whole fire department. Men in other kinds of business also complain that cigaret smokers are not good, reliable workers and some will not hire them at all.

What is the reason that boys who smoke cigarets are not so apt to be strong and healthy, and get their full growth? Let us see.

By questioning recall the simple lessons already learned showing that the blood is the life of the body; that it is constantly becoming impure and must be cleansed; that it is the work of the lungs to purify the blood by means of the oxygen in the fresh air we breathe in and, hence, of the great importance of pure air. Emphasize anew the trouble that is likely to come from trying to repair the body and especially to help it to grow large when the blood is impure.

Who has ever accidentally breathed in smoke? How did it make the nose and throat feel?

Let us make an experiment to see what might happen in the thousands of tiny cells of the lungs when smoke is breathed in.

Have ready a small egg-shaped wire frame such as may easily be made by bending two 14-inch wires and tying them where they cross at the top. Around and over this gather with the hand an old thin white handkerchief on which with a blue pencil you have sketched the venules and with a red pencil, the arterioles. Tell the class that this will roughly represent one of the many thousands of collapsible cells which together with the bronchial tubes compose the lungs. Recall the extreme delicacy of these membranes and the fact that the purity of the blood depends upon the way they do their work.

Carefully burn one or two matches (enough so that the handkerchief will show discolora-

tion from the soot) under the opening at the bottom. The smoke will rise almost immediately and pass through. Explain simply that just as the smoke is passing out through the pores of the cloth, the fresh air is flowing in; that in much the same way the membrane of the tiny lung cell ordinarily allows the oxygen in the pure air we breathe in to pass through to the blood in the tiny tubes surrounding each cell; the impurities pass back into the cell and we breathe them out. Smoke is irritating, poisonous air containing soot.

It is easy to see how bad it would be for the delicate air tubes and cells and worse still for the blood all over the outside waiting to give up its impurity and receive in exchange the oxygen. Show the soot collected inside of the handkerchief. The cell is irritated and becomes somewhat clogged by the soot. The poisoned air of the smoke now goes right into the blood in the tiny tubes, poisoning it instead of properly purifying it.

Breathing thick smoke for a few minutes might suffocate one as it did those firemen.

What happens sometimes when gas pipes leak a great deal or when people ignorantly blow out the gas instead of turning it off? When people have to breathe air which has been breathed over and over by others as they did at the "Black Hole" at Calcutta? Or when miners are forced by accidents to breathe foul air? What in every case was the reason for these deaths? We see that whenever the blood cannot be purified death comes.

Suppose people in any of these cases did not breathe too much poisoned air at once or breathed less poisoned air for a long time? Always they fall quite ill or feel sick or wretched or not like work.

Suppose again that it was growing children who had to breathe very impure air for a long time, what serious effect would it have on them?

Think separately of all the parts of a child's body that have to be kept in repair and constantly made larger—the bones, the muscles, the heart and arteries, the stomach, the liver, the lungs, even the skin, and, most important of all, the brain and the nerves—all these depending every minute on the purity of the blood for their power to grow strong and healthy.

We can readily see that children whose blood is poisoned instead of purified cannot grow so well and are always likely to be undersized as many of the cigaret-smoking firemen were.

Bearing in mind how the smoke from ordinary combustion drawn into the lungs irritates and clogs the air passages and cells and its poisonous gases pass into the blood, poison-

ing it and hence all parts of the body, let us imagine what the effect would be if a boy breathed in such smoke for several moments from one to twenty times per day. Suppose again that instead of common smoke he inhales cigaret smoke in that way. Isn't it reasonable to suppose that inhaling cigaret smoke would be much more harmful, for here we have the narcotic, nicotine?

Compare nicotine with common poisons such as arsenic, strychnine, and prussic acid, showing by illustrations that its virulence is equal to the last. The boy can readily see for himself how powerful it must be when it can bring on the dreadful nausea and collapse so soon after the novice smokes and how quickly even those habituated feel its narcotic effects. Point out the ease with which it is set free in smoking and, accordingly (since about fifty per cent. of what was originally in the cigaret, cigar, or pipe is in the smoke) some traces, more or less, according to the strength of the tobacco used, are always to be found in the smoke. See that the class has the mental picture clearly defined; this virulent poison, in very small quantities, it is true, else death might ensue, passes directly into the blood which carries it swiftly to all parts of the body and the red blood cells are so affected that they cannot carry so much oxygen.

What kind of a poison is nicotine? If it is a narcotic, what special organs would it affect? If the brain is affected, what results to all the other organs governed by the brain? Show that all would act less strongly because the nervous current would be weaker. The great nerve controlling the heart, is especially harmed and does not keep the heart beating so strongly and steadily. Can you think of any reason why habitual cigaret smokers do not have good "wind" enough to enjoy athletics and excel in them? (Both lung and heart action are below par.)

But this is not the worst of the story. The brain and nerves are growing, or ought to be, just the same as the other parts of the body. If they have poisoned blood instead of that which is pure, what would be the effect on the growth of the brain and so, on the man's mind?

Upon what do we depend for the ability to learn our lessons? Why, then, do cigaret smokers often fall behind in their lessons?

What is the nature of all narcotics? What is the reason the boy who begins by smoking once in a while, soon smokes every day and often becomes a "fiend"? Be sure to emphasize the habit-forming power of narcotics showing that by its effect on the brain it makes a craving for itself, while at the same time it makes one lose the power to say "no" and stick to it.

THE CAMEL'S NOSE

By Lydia H. Sigourney

ONCE in his shop a workman wrought
With languid head and listless thought,
When, through the open window's space,
Behold, a camel thrust his face.
"My nose is cold," he meekly cried,
"Oh, let me warm it by thy side!"

Since no denial word was said,
In came the nose, in came the head;
As sure as sermon follows text,
The long and scraggy neck came next;
And then, as falls the threatening storm,
In leaped the whole ungainly form.

Aghast the owner gazed around,
And on the rude invader frowned;
Convinced, as closer still he pressed,
There was no room for such a guest;
Yet more astonished, heard him say,
"If thou art troubled, go away,
For in this place I choose to stay."

O, youthful hearts to gladness born,
Treat not this Arab lore with scorn;
To evil habits' earliest wile
Lend neither ear, nor glance, nor smile;
Choke the dark fountain ere its flows,
Nor e'en admit the Camel's nose."

Lessons in Habit Building for Little Folks

AFTER reading the poem, "The Camel's Nose," to the children, ask them to reproduce the story in their own words. Discuss it a little. What was the man doing? (Bring out the thought that he was about his regular work as they might be.) Did he think the camel's request of any special importance? How did the owner feel when he saw the camel wholly inside? What did the camel say when the man wished him to go? How would the camel's staying affect the man's carrying on his business successfully?

Mention some bad habits that may hinder one. Refer to such as carelessness, inattention, unpunctuality, bad language, or others that may touch the class more nearly.

Who knows of some serious consequences that have come from some of these? Speak of accidents in the streets because of carelessness in dropping banana skins, papers, etc.; and of railroad disasters and even of battles lost because somebody was late. Point out as well that while these more serious consequences were occasional, the simpler ones are constant hindrances to our doing our best work.

In what ways are habits like the camel? Lead the children to see clearly (1) that habits are formed little by little as the camel worked his way in and that when one permits himself to do a single unwise or wrong thing it may begin an unfortunate habit; and (2) the great difficulty of getting rid of a bad habit once it has got settled. Like the camel it says "Here I choose to stay." Tell the children that next lesson you will tell them an American story.

Write the poem on the black-board and let the children copy it as a part of their busy work. Later have them commit it to memory and occasionally refer to it when a child is seen to be forming an undesirable habit.

PART II.

WE spoke yesterday of habits like carelessness and the use of bad language, but there

are other habits which are harmful as well as hindering, and which are much more difficult to break. Today I will tell you an American story and you may watch to see in what ways it is like the Arabian story.

AN AMERICAN STORY

ONE DAY a man who was a good workman and well liked went out to lunch with a shop-mate. His mate offered him a glass of beer. He said it was a safe and pleasant drink and so without thinking much about it our workman drank it. Other days came and sometimes he ordered a drink for himself as well as drank with the others. At first he did not notice that it made any difference with his work or with his health. Soon he was in the habit of taking a glass of beer every day; then of taking two glasses and after a time of taking several. It was easy then to drink stronger liquors and he often used whiskey.

But now he began to see that he was not getting along as well with his work. He could not do as much nor do it as well and the superintendent threatened to discharge him. He was often sick, too. He lost many friends and things went from bad to worse. At last he understood that the alcoholic drinks were doing him great harm and he decided to stop using them; but when he tried to stop it seemed almost impossible. The craving for the alcohol seemed to say to him, "You have let me come in and now I choose to stay."

(Note. If cider or wine is the lighter drink most familiar to the children, substitute it for beer in the story. If desired a similar story of how a cigaret user formed the habit may be used and the lesson developed along that line.)

In reproduction and discussion see that the children note that: the man was about his ordinary business; he did not think it could do any harm to take one drink; like the camel, the habit came in a little at a time and like it, after a time it hindered the man, crowded out the good things. It impaired his work, in-

jured his health and lost him his friends. The beer led the way to the strong liquor, and the habit was terribly hard to get rid of.

Explain in simple language why the beer (or wine or cider), which at first seemed harmless, could cause a dangerous habit, showing that it is because it contains the poison, alcohol. Alcohol if taken often, even in the small quantities found in these drinks, is very liable to harm the health though we may not notice it for some time; and it is the nature of alcohol to make one want it more and more until sometimes he cannot stop at all.

Emphasize the danger of beginning to use alcoholic drinks for these reasons. Have the children write a little composition of very simple statements showing how the drinking habit was like the camel and, why one ought not to drink beer, wine or cider, and, of course, ought to avoid the strong liquors.

"Every time that we yield to temptation
It is easier for us to do wrong;
Every time we resist temptation
It is easier for us to be strong."

SPECIAL OFFER

National Temperance Advocate

A TEMPERANCE PAPER FOR THE FAMILY. TEMPERANCE STORIES, POEMS, FIELD NOTES. MONTHLY NEWS AS TO WHAT GOOD TEMPLARS, ALL CHURCH TEMPERANCE SOCIETIES, ETC., ARE DOING. JUST WHAT YOU NEED.

Advocate, \$1.00 }
Journal, .60 } BOTH \$1.25

Resistance to Alcoholism

DR. PREISIG of Cery-Lausanne, Switzerland, has communicated to *L'Abstinence* (Oct. 1910), the results of some observations he has been making in regard to the family history of those who have much and those who have little resistance to alcohol. He endeavored particularly to collect information about robust drinkers who "carry" wine well and have become advanced in age without suffering from nervous attacks, especially delirium tremens.

The study of the ancestry of these cases seems to explain their comparative immunity. It is found that drinkers who are attacked by epilepsy, delirium tremens, etc., are generally sufferers from hereditary nervous troubles. In most of these cases the father has been a drinker. The drinker who becomes delirious and is put in an asylum is oftentimes an alcoholic of the second generation.

Dr. Preisig is of the opinion that alcoholics who bear alcohol well have descended from healthy and sober parents. He endeavored to find as large a number of these cases as possible, but they proved to be quite rare.

He is endeavoring to increase his list by appealing to all who know such cases to send him information concerning them which he will treat as confidential.

He has already information which shows clearly that resistance to alcohol diminishes with the generations of drinkers.

Publication Department

Alcohol and the Human Body

(Revised Edition)

By Sir Victor Horsley and Mary Sturge, M. D.

How does alcohol affect the body processes, organs, and intellectual work; cause crime and insanity; lower the power of the body to resist diseases; injure the child and imperil the race, etc.? These questions answered simply but scientifically and interestingly. 370 pp.; 16 beautiful plates; 21 diagrams.

Price postpaid \$.96.

The Saloon Problem

By Prof. John M. Barker, Ph. D.

Has chapters dealing with the economic, political, social and criminal aspects of the liquor problem; legislation, education, law enforcement and successful methods of work.

Price postpaid \$1.10.

Alcohol and the Individual

By Henry Smith Williams, M. D., LL. D.

The valuable articles published in *McClure's* on the relation of alcohol to individual well-being and efficiency, with extracts from article of the Doctors Rcsanoff, in attractive book form. Every temperance organization, minister and teacher should secure a copy and use it.

Price postpaid \$.55.

Alcohol a Dangerous and Unnecessary Medicine

By Mrs. Martha M. Allen.

A helpful compendium of information as to the dangers of alcohol, the reasons why physicians are lessening or abolishing its use in medicine; substitutes which may be used in its place.

Price postpaid \$1.25.

COMBINATION OFFER TO NEW SUBSCRIBERS

Alcohol and the Human Body	\$.96	} ONLY
Scientific Temperance Journal	.60	
		\$1.45
The Saloon Problem	\$1.10	} ONLY
Scientific Temperance Journal	.60	
		\$1.50

Alcohol and the Individual	\$.55	} ONLY
Scientific Temperance Journal	.60	
		\$1.00
Alcohol, a Dangerous Medicine	\$1.25	} ONLY
Scientific Temperance Journal	.60	
		\$1.35

SCIENTIFIC TEMPERANCE JOURNAL, - - 23 Trull Street, Boston, Mass.

The Gulick Hygiene Series

Educators agree that the first purpose of the study of physiology and hygiene should be in the lower grades, to influence children definitely towards intelligent habits of living. The child's own action, experience and observation should be made the object of constant appeal. This the Gulick Hygiene Series does. The originality of the design of these books and the scientific and effective treatment of the material is equaled in no other series of textbooks on hygiene and physiology. The series conforms to the requirements of every state law in the amount of study given to the subject of alcohol and other narcotics.

Arranged for school use and home reading in a

**Five-Book Course and a
Two-Book Course.**

GINN AND COMPANY

29 BEACON ST., . . . BOSTON

A New Method!

Travelling Loan Exhibit

—Of—
ATTRACTIVE DIAGRAMS.

Showing
Scientific Facts about Alcohol

WHAT IS IT?

Exhibit consists of 25 Colored Charts (framed or not as desired, size 22x28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other infectious Diseases, Longevity, etc. No objectionable details. Based on most reliable scientific experiments. Excellent for No-License Campaigns.

WHO USE IT?

General Expositions
Teachers' Institutes
Charitable Organizations
Christian Endeavor Conventions
Sunday School Associations
Temperance Lecturers and Conventions
Physicians, Ministers
200,000 persons have seen these charts in two years.

HAVE YOU HAD THEM?

Send for Full Information as to Expense and Plan for Use.

Scientific Temperance Federation

23 Trull Street, . . . Boston, Massachusetts

ALCOHOL in Every- Day Life!

ILLUSTRATED LECTURE

A New Story in A New Way

THE scientific side of the alcohol problem is here presented in a popular lecture which appeals to the eye as well as to the ear by means of 60 fine new lantern slides. These include interesting pictures, a number in colors made from original drawings representing the results of scientific experiments, and a few attractive physiological plates.

Most important phases covered. Nothing objectionable.

**AVAILABLE AND SPECIALLY
DESIRABLE FOR**

No-License Campaigns, Public Temperance Meetings held in Churches or by Temperance Organizations, Labor Unions, Societies of Christian Endeavor, Loyal Temperance Legions, Patrons of Husbandry, Lyceums and Chautauquas, Parental or Industrial Schools, Social Betterment Workers, and for Teachers' Institutes and Receptions, and High and Normal Schools.

Subjects of Some of the Slides

Alcohol and Hard Work.
How Muscle Work Is Measured.
Alcohol and Endurance.
Which Way Lies Success in Sport.
A Sixty-Mile Walking Match.
What Yale Football Men Say.
The Cost of a Mistake.
A Story for Bookkeepers.
Effect of Alcohol on Marksmanship.
Alcohol and Typesetting.
What the Shoe Manufacturer Knows.
A Healthy Nerve Cell.
What Alcohol Does to the Nerve Fibres.
Why Doesn't he Control Himself?
Accidents and Drinking Days.
Where Accidents are Liable to Occur after Drinking.
Drink and Lead Poisoning.
Comparative Sickness of Abstainers and Non-Abstainers.
Drink and Impaired Vigor of Children, Etc.

Comment on Lecture

The lecture "Alcohol in Every-Day Life" is an exceedingly interesting and rarely wholesome presentation of the latest and most scientific methods of discussing alcoholism. Any one who works among the masses in our cities sees the awful havoc wrought by drink in the social, industrial, moral and spiritual life of the people. But very few know much, if anything, about the scientific facts presented in this illuminating lecture—Rev. Winfred C. Rhoades, Eliot Congregational Church, Boston, Mass.

Full information as to terms for lecture on request.

Scientific Temperance Journal, 23 Trull St., Boston.

SCIENTIFIC TEMPERANCE JOURNAL

— *Continuing the* —
SCHOOL PHYSIOLOGY JOURNAL

“Not with all our strife and pain
Shall you and I attain
To behold that end we long and pray to see;
But we know that though we die,
The end cometh bye-and-bye,
And we have helped the better days to be.

“Is not this reward enough—
To have helped to shape the rough,
To have made the toilsome way a little clear;
To have fallen in the van
(Though but one forgotten man)
Of the army that is bringing the New Year.”

Published at—
BOSTON, MASS.

DECEMBER, 1910

New Century Series

—OF—

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fulness and accuracy of the treatment in regard to the nature and effects of alcoholic drinks and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

An Educational Temperance Organization

Purpose.—To make known in every possible way, in popular form, the proved facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

Methods.—The dissemination of facts by the following and other methods: **Personal Correspondence**, An Editor's **Press Circular**, **Loan Exhibit** of Scientific Charts, **Popular Leaflets**, **The Scientific Temperance Journal**, A **Stereopticon Lecture**.

Its Membership

Advantages.—All members are entitled to ask for special information on temperance topics and to receive free, notices of useful new publications, samples of leaflets or other information published by the Federation.

Associate Membership is open to all who desire (1) to have fuller acquaintance with the alcohol and narcotic question which membership in the Federation affords, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance. **Members' fees \$1.50 annually** and all members may receive the **SCIENTIFIC TEMPERANCE JOURNAL** at the special price of 50 cents.

All contributors of \$10.00 or more annually are known as **Sustaining Members**. The payment of \$100.00 or more constitutes one a **Life Member**.

The Scientific Temperance Federation has a unique place to fill; a distinct message and work. Its aims are fundamental and practical.

THE SCIENTIFIC TEMPERANCE FEDERATION,
23 Trull Street, Boston, Mass.

Of Special Interest to Physicians

Alcohol and the Human Body

By Sir Victor Horslea and Mary Sturge, M. D.

A scientific and up-to-date (1908) work in English. Includes chapters on Alcohol as a Drug, as a Food, effects of Alcohol on each Organ, on Child Life, Degeneration of Nervous System, Race Degeneracy, National Health, etc. 370 pp. 37 plates and diagrams.

Price postpaid \$.96.

Psychology of Alcoholism

By George B. Cutten, B. D., M. A., Ph. D.

A summary of research on effects of alcohol on nervous system, intellect, will, emotions, senses, insanity, and of cures.

Price postpaid \$1.65.

Alcohol a Dangerous and Unnecessary Medicine

By Mrs. Martha M. Allen.

A compilation of information as to the dangers of alcohol, the reasons why physicians are lessening or abolishing its use in medicine.

Price postpaid \$1.25

Alcohol and the Human Body	\$.96	} \$1.45
Scientific Temperance Journal	.60	
Psychology of Alcoholism	\$1.65	} \$1.50
Scientific Temperance Journal	.60	

Alcohol, a Dangerous Medicine	\$1.25	} \$1.35
Scientific Temperance Journal	.60	

American Journal of Clinical Medicine	\$2.00	} \$2.50
or Journal of Inebriety		
Scientific Temperance Journal	.60	

American Medicine	\$1.00	} \$1.40
Scientific Temperance Journal	.60	

Bulletin American Academy of Medicine	\$3.00	} \$3.00
Scientific Temperance Journal	.50	

American Journal of Surgery	\$1.00	} \$1.35
Scientific Temperance Journal	.60	

American Journal of Medical Sciences	\$5.00	} \$5.00
(new)		
Scientific Temperance Journal	.60	

American Journal of Public Health	\$1.50	} \$1.95
Scientific Temperance Journal	.60	

Univ. Pa. Medical Bulletin	\$2.00	} \$2.20
Scientific Temperance Journal	.60	

Lancet-Clinic	\$3.00	} \$3.00
Scientific Temperance Journal	.60	

Any Other Combinations Desired.

SCIENTIFIC TEMPERANCE JOURNAL, - 23 Trull Street, Boston, Mass.

Please mention the Scientific Temperance Journal when writing to advertisers.

Digitized by Google

Scientific Temperance Journal

Vol. XX

BOSTON, DECEMBER, 1910

No. 4

The Heart of Christmas

By Cella Charter

THINE own wish wish I thee in every place,
The Christmas joy, the song, the feast, the cheer :

Thine be the light of love in every face

That looks on thee to bless thy coming year.

My own wish wish I thee—what dost thou crave?

All thy dear hopes be thine whate'er they be.

A wish fulfilled may make thee king or slave,

I wish thee wisdom's eyes wherewith to see.

Behold, she stands and waits, the youthful year :

A breeze of morning breathes about her brows ;

She holds the storm and sunshine, bliss and fear,

Blossoms and fruit upon the bending boughs,

She brings thee gifts. What blessing wilt thou choose ?

Life's crown of good in earth or Heaven above !

The one immortal joy thou canst not lose

Is love ! Leave all the rest and choose thou love.

The Physician's Standpoint

By P. LIGON HENDERSON, M. D.

["It cannot be denied that the general trend of medical opinion is adverse to the employment of alcohol and this change of front is plainly shown by the fact that hospitals use far less alcohol than was formerly the case.—Editorial in *Medical Record*.]

IN this age of scientific progress we are confronted by many problems the proper solution of which requires more careful thought and painstaking investigation.

There is not one before us today that is viewed with as much concern as the alcohol problem, not even the problem of tuberculosis. From a moral, economic, sociologic, scientific, medical and public health point of view, the alcohol problem is one of the most vitally important unsolved problems of the world today.

Every advance in the scientific study of disease and degeneration points unmistakably to alcohol as one of the most potent agents in the diseases and destruction of the human race. Scientific studies of the causes of accidents, injuries and the great forces of heredity, bring out this same fact in greater prominence, that alcohol in some form is the most influential factor of these losses.

Public opinion demands, and has the right to demand, that the action and influence be determined and settled by the medical profession, and that we teach the people the truth fully, conscientiously and fearlessly. When physicians take hold of the question in the same spirit they have shown concerning yellow fever, smallpox, malaria, tuberculosis, instead of treating it as a moral question and leaving it to clergymen, temperance workers and reformers, we may expect better results. More may be accomplished by teaching the people the truth in regard to the fatal effects of alcohol upon the mental and physical efficiency than by expatiating on the moral wick-

edness of drinking and I would not undervalue the latter.

One little incident in connection with the London Congress deserves special mention, showing the ingenious methods to which the liquor interests will resort to carry their point. It is this: each member of this Congress received two bottles of Tokay wine with the compliments, apparently, of the Hungarian Minister of Agriculture. In reality it came from the wine-grower's association and had a certificate from the minister that the product was pure. Accompanying this present was a very attractive booklet giving great prominence to the value of this wine and calling the doctors' attention to its medicinal power.

A circular letter protesting against this was issued, signed by Sir Victor Horsley of England, as president, and more than fifty leading English and Continental physicians, denying that alcohol had any value and considering it an insult to be advised concerning the value of spirits or wines in any form. This letter urged members not to accept this present and thus become a party to an iniquitous delusion which every scientific study and clinical experience had flatly contradicted.

This created quite a stir and the wine dealers tried to take advantage of it for advertising purposes by a canvas among the leading physicians to secure their endorsement. To their great astonishment nearly every leading man refused to be interviewed or to commit himself to the endorsement of wine as a medicine.—*Kentucky Medical Journal*. (June 1, 1910.)

One Physician's Remedy

By FREDERICK PETERSON, M. D.

Professor of Psychiatry, Columbia University

THIRTY years ago physicians were rather promoters of the use of alcohol both as a stimulant and as a remedial agent. Now everywhere on both sides of the Atlantic medical men are foremost opposers of the use of spirituous liquors as a beverage or even as an agent in the treatment of disease. They have been living rather securely in the tradition that alcohol had always been with them and that most peoples who had reached the crest of development had been free users of wine and beers and that if alcohol carried with it any peril to the race, mankind would have degenerated long ago.

Close historical study shows that drinking was not so widespread in ancient days as now. The liquors contained less alcohol and having no ice machines they could not brew beer all the year around. The strong drinks, whiskies, brandies, cocktails, bitters and absinthe had not been invented. Without railroads and without bottles there was less distribution.

With the wider diffusion of the idea that alcohol was a food, drinking became more general and alcoholism more noticeable. With the tremendous awakening of science in the latter part of the nineteenth century, and with the extraordinary progress of the science of medicine, it was natural that alcohol should have its share of investigation.

The facts which have been borne in upon medical men by such studies are overwhelming and physicians are just beginning to understand how much responsibility rests upon them for the abatement of this evil.

All physicians are familiar with the large catalogue of physical disorders directly due to alcohol, such as cirrhosis of the liver, dropsy, multiple neuritis, heart disease, Bright's disease, inflammation of the stomach, arteriosclerosis, delirium tremens, wet brain, and the like. The number of these cases is constantly increasing. Between 20 and 25 per cent. of all the insane owe their insanity to alcohol....

In answer to the question what had best be done for the prevention of alcoholism, Dr. Peterson thought that a campaign of education such as was being carried on in the fight against tuberculosis was the only efficient method of warding off the evils of drink. He advised having printed in brief form all the facts on this question which the medical profession now has at hand. In Paris they have statements regarding the dangers of heavy drinking, printed on posters and put up in

every ward and waiting-room of every public hospital and printed on every prescription blank of the Paris hospitals and dispensaries.

Dr. Peterson asked why our public spirited citizens should not join in such a crusade. Children should be taught these facts in the schools. Every hospital and dispensary in the country should begin a similar method of disseminating them. Our asylums for the insane and epileptic ought to print the statistics of alcohol as a cause of insanity and epilepsy on every letter sent out. There are many shopkeepers, owners of department stores, druggists and others who would be willing to have instructions printed on their wrapping paper. Indeed such facts should be kept as a standing advertisement in many of our newspapers with wide circulation.

He had himself tried the experiment of printing them in briefer form on his own prescription blanks and wished that the 132,000 other physicians in the United States might be induced to aid the movement to this extent, for they knew better than anyone else the fearful ravages of alcohol.—From the *Medical Record* (June 11, 1910).

Epilepsy Caused or Augmented by Alcoholism

THE *Deutsche Medezinalzeitung* (April 2, 1910) contains a review of two articles on the connection between alcohol and epilepsy, and another (Roemer) containing the statement that the effects of small doses of alcohol consist in a strikingly active increase of irritability and motor excitability which is typical in persons having a tendency to epilepsy.

One of the other authors, Dr. Mino Randella (*Archives di Psichiatria*, 1908) says that the connection between alcoholism and epilepsy is not denied. The only point is that there is not unanimity of opinion as to whether the abuse of spirits causes an attack directly, or is a contributory cause. The intolerance of epileptics toward alcohol is well known; from this one may say that alcohol has a predisposition for epilepsy; and on the other hand this intolerance can be taken as an acquired influence of the cerebral process so that the factors to be taken into account in epilepsy are: The original cerebral abnormality, the alcoholic intolerance, and alcohol.

A Survey of the Field

By E. L. Transcan

Recording Secretary of the Scientific Temperance Federation

The following articles together with others appearing elsewhere in this number of the *Journal* give a partial presentation of the discussions relating to the beverage use of alcohol that have appeared in medical journals during the past year. They were taken from the forthcoming annual report of the Scientific Temperance Federation.

THE medical and scientific literature of the year has contained a large number of articles on the various phases of the physiological relations of alcohol, a larger proportion than usual being by American physicians who not only show an increasingly definite knowledge of the subject, but frequently sound the note of professional responsibility.

Articles touching only the "academic" or theoretical phases of the action of alcohol are of little or no importance to the sociological side of the question. But those which verify, condemn, or throw new light upon the opinions which influence human action with reference to the beverage use of alcohol, are of great sociological importance. It is the progressive aspects of these subjects with which temperance workers must keep informed.

To quote even a few lines from all the authorities at hand would be impossible in the space available and it seems best at this time

to quote the more important and typical ones at greater length, omitting a number which cover the same ground.

The principal physiological connections involved in the beverage use of alcohol are the following:

I. The supposed harmlessness of the moderate use of the weaker alcoholic liquors.

II. The supposed beneficial effect of alcoholic drinks, beer, ale and wine especially as an aid to digestion.

III. The belief in the stimulating effect of alcohol upon weak heart action, in states of fatigue or lassitude.

IV. The belief in the stimulating action of alcohol upon the brain and hence its value in obtaining greater mental power or brilliancy for exacting brain work, or for enjoyable social intercourse.

V. An exaggerated idea of the value of alcohol as a medicine in debility or sickness. (See pp. 49-50.)

A Consideration of the Effects of Moderate Drinking

Moderation Detrimental to Highest Efficiency

THE actual or reputed presence among us of the wine or beer drinking octogenarians apparently in perfect health, and the difficulty of producing visible evidence of physiological injury from moderate drinking has given much encouragement to the defender of such use but in addition to the unequivocal story the life insurance tables tell an unanswerable argument against him is the proof of greater physical efficiency obtained by abstinence among athletes.

Thus, Dr. Flade of Dresden in reviewing the alcohol literature of 1909, mentions the increasing emphasis laid upon abstinence in athletic training. "From the nature of alcohol," he says, "it is clear that its use, especially its habitual use, even in small quantities, renders difficult or impossible the highest physical efficiency and endurance."

Undoubtedly this emphasis is still more marked in America than in Europe. The *Boston Medical and Surgical Journal* (May 5, 1910) commenting editorially upon the Marathon Race says: "The fact that none of the contestants used alcohol during the race, and

that all but one finished in good condition, is another evidence that alcohol diminishes rather than increases bodily endurance and capacity for work, since in former years runners who have used alcohol have been the first to give out."

But it is not alone in the events and in the actual training that alcoholics are seen to be injurious to highest efficiency. We read the statement of Connie Mack, manager of the Philadelphia Athletics, winners of the international championship; "Alcoholism is practically eliminated from base-ball." He says further that of his wonderful team of twenty-five players, fifteen do not know the taste of liquors and the few remaining are practically abstainers.

Impairs The Highest Mental Faculties

INDULGENCE in alcohol in very small quantities," says Prof. Kraepelin in a recent volume of lectures¹, "immediately weakens the power of resisting temptation. We all know that nobody sits down to get drunk, but that under the influence of the first

few glasses self-control is more and more completely lost."

An editorial in the *New York Med. Record* (May 8, 1910) said: "Many authorities hold that total abstinence from beverages of a stimulating character is the most healthful procedure for every one, and especially so for brain workers. "Sir Victor Horsley," the *Record* continues, "the well known British authority on brain surgery, has frequently voiced his views that under any condition alcohol is a veritable poison, and there are many more men of the highest scientific rank in all civilized countries who are of the same opinion."

The damage done by amounts too small to cause definite changes in structure is pointed out by A. W. Ives, M. D.,² who says: "Even where, due to alcohol there is as yet no such demonstrable change, there is a disturbance in the cranial circulation and a drug effect causing defective cerebration, loss of will power, loss of the power to think and judge up to one's normal; there is a reduction of intellect. There generally is, however, increased gullibility, loquacity, and a well recognized inability to judge of just the impression one is creating, of the kind of an exhibition one is making of himself. A drug that can bring a brain's function to the point of coma, cannot, even in mild doses, add anything to the power of that brain. It decreases one's capacity for mental and physical work."

Evidence against the supposed stimulating effect of alcohol upon brain function is furnished by one of the important researches of the year,—a test of the effect of alcohol on memory carried out by Dr. R. Vogt,* of the University of Christiania, Norway. He practised memorizing twenty-five lines of the *Odessey* sometimes with and sometimes without taking alcohol in doses of from 15 to 25 grams. Most of the experiments were made a few minutes after breakfast, before taking up his regular work. In every instance it took him longer to memorize the twenty-five lines after he had taken alcohol than on the days when he did not use it.

A few of the experiments were performed before breakfast, and in these the effect of the alcohol was much worse than in the experiments made after breakfast. Fifteen grams of alcohol, the amount in between one and two glasses of beer, had a worse effect taken before breakfast than thirty grams, the amount in three glasses of beer, taken after breakfast.

Another set of tests was on the ability to relearn, after an interval of about 100 days,

the sections previously learned. It took longer to relearn the passages originally committed on the alcohol days, showing that the original impression on those days was less strong.

That social drinking is a handicap instead of an advantage to social intercourse is the opinion of Prof. Max Mayer of Columbia, Mo., a native of Germany. He says it is ridiculous to affirm that the American who does not drink deprives himself of any of life's enjoyment. He satisfies his social needs by substituting for the drinking customs of Europe, social, intellectual and aesthetic acquirements, and that this signifies no loss of life's enjoyments, but an indisputable progress in civilization.—(*Der Abstinenz*, Feb., 1910.)

Alcohol as a Cause of Sickness and Mortality

A REPORT on the causes of disease in the local sickness societies of Leipzig and vicinity was recently published by the house of Karl Weymanns, Berlin. The investigation from the records of the sickness assurance association, begun in 1903, covered nearly a million cases of men and more than a quarter of a million of women. An appendix treated of the cases of alcoholism. Only those recorded as toppers, dipsomaniacs, cases of delirium tremens and alcoholic insanity were included in the class, which left many immoderate drinkers in the general class. The ages of this class ranged from twenty-five to thirty-four years, but the number of days they were sick and unable to work was two and one-half times that of the general class. Their physical condition was worse than that of old men over seventy-five years of age in the general class.

Besides the large number of brief sicknesses they showed a far higher number of long continued diseases than the general. The mortality was correspondingly higher. There was, moreover, a larger record of accidents.

There was also much greater frequency in change of working places and kind of occupation among the 630 men alcoholics investigated. They averaged five different occupations and only 585 days in each.—From the *Hygienische Rundschau* (July 1, 1910).

IMPAIRS ABILITY TO RESIST DISEASE

A statement concerning the harmfulness of small amounts occurs in an article by Dr. Moses Kreschner, visiting physician to the Brooklyn city prison³ who quotes Prof. Rosenfeld, of Breslau, as follows: "Alcohol lessens the power of resistance in the acute infectious diseases. Even its moderate use has a bad ef-

1. Lectures on Clinical Psychiatry (p. 173).

2. *Detroit Med. Jour.* (June, 1910).

3. *New York Med. Journal* (Oct. 8, 1910).

* *Norsk Journal of Medicine* (No. 6, 1910).

An incident showing that alcohol lowers the power of the body to resist some diseases without affecting the defence against others was brought out in the course of experiments by Drs. Abbott and Gild.⁴ Three rabbits that had received alcohol and showed a marked lowering of resistance, as indicated by the opsonic index, resisted the special disease germ with which they were inoculated as well as the controls that had received no alcohol. But all three were taken ill within three days of the time the alcohol was begun

Dr. Reid quotes this significant passage from Dr. Buchner, professor of medicine in Munich University. "Alcohol kills the largest number of victims by ambush as it were, in that it undermines the power of resistance to



Press dispatches from Honolulu announce that Dr. Walter Brinkerhoff has expressed the opinion, based on his observation for the last four years at the leprosy experimental hospi-

Increased susceptibility to lead poisoning is another charge against moderate drinking now frequently brought forward. Richard Müller in a prize essay on lead poisoning published in Jena (1908)⁷ condemns the use of alcohol in any form, even in beer, by those engaged in lead industries.

4. Medical Bulletin of Univ. of Pa. (June, 1910).
5. Jnl. Am. Med. Assn. (Aug. 6, 1910).
6. Glasgow Medical Journal (Sept. 1910).
7. Hygienische Rundschau (Mar. 1, 1910).

What is the Harmless Quantity?

The supposition that the moderate use of alcohol is not harmful implies a limit somewhere between the immoderate amount which is conceded to be harmful and the moderate amount which is supposed to be uninjurious. Dr. Gustav Kabrhel of Prague has written an exhaustive review⁸ of all the means of determining the moderate dose that could be used without dangerous consequences and concludes that the problem is not solvable.

Where the Harm May First Appear

Prof. Kabrhel has, furthermore, found anatomical evidence of disturbance in the germinal cells of parents whose moderate use of alcohol showed no injury to general health.

This is similar to the report of microscopical findings published last year by Prof. Bertholet of the Pathological Institute of Lausanne.⁹ He made post mortem microscopic examinations on seventy-five men who had died between the ages of fifteen and ninety-one, thirty-nine were known to be victims of chronic alcoholism. Some degree of atrophy was found in the germinal glands of all but two cases. The most marked changes were found in those alcoholics who had died of tuberculosis or liver cirrhosis. Complete atrophy was found in one drinker only twenty-four years old. In other cases where the atrophy was not so pronounced, isolated cells here and there were attacked. While some changes could be detected in the non-alcoholic subjects, extended and premature atrophy was found only in the alcoholic.

Medical opinion as to the evidence of hereditary effects of alcohol is strikingly presented in the words of Dr. H. M. Lee¹⁰:

"It is getting so that when as physicians we see the neurotic child, the various tremors and evidences of an incoordination, epilepsy, the question arises how much is rum back of this, or fast life and enfeebled sexual powers."

The Effect Upon Digestion

An important fact concerning the supposed aid furnished by alcohol to digestion is brought out by Dr. Nellis B. Foster.¹¹ Referring to the dogs used for gastric experiments in the Pawlow laboratory, he says:

"If alcohol be mixed with the food of these dogs, there is an increase in the amount of gastric juice beyond what is found in control dogs with the same diet. But if the alcohol be given several days in succession there is a prompt falling off after a few days in the

amount of juice secreted. The conclusion at which one would arrive from this experiment is that the initial stimulation of the gastric glands caused by alcohol is followed by a period of diminished irritability to this stimulus, and such an idea is quite in accord with general physiological principles."

Dr. W. Eisenhardt of Berlin, investigated the digestive function in a large number of chronic drinkers and found only one case in which the process was normal.¹²

Where the Food Value Theory Stands

Various opinions are still held as to the food value of alcohol. But an increasing number hold views like the following:

"While alcohol is capable of being oxidized in the body, it cannot be considered a food for it is capable of replacing the hydrocarbons only to a very limited extent. In fact, alcohol cannot be considered as a food."—Dr. E. R. Zemp.¹³

"Alcohol is considered a food-sparing agent by some observers, its value corresponding with its energy-producing equivalent of pure food hydrocarbon. This presupposes, however, that alcohol is used by the tissues in the same manner as these hydrocarbons—merely because its oxidation liberates energy in the form of heat. But this is a fallacious idea; alcohol only simulates normal oxidation; far from being the product of cellular exchanges which constitute the vital processes, the heat it liberates is at the expense of the tissue, since by becoming oxidized itself, especially in the liver whereby the body is protected against its toxic effects—it uses oxygen intended to sustain tissue metabolism. If alcohol were a food, large doses would prove more profitable to the organism than small ones; but the reverse is the case; large doses check all activities that would be enhanced by a liberal use of food. The debilitating action of alcohol on the nervous system, for example, has been demonstrated by Bunge, Schmiedeborg, Ach and Kraepelin and others, while Dogiel found that it markedly depressed both motor and sensory nerve centres. It does this not only with nervous tissue but with all tissues. A depressing agent cannot logically be regarded as a food."—Dr. Chas. E. de M. Sajous, Prof. of Therapeutics in Temple University, Phila., Pa.¹⁴

8. *Hygienische Rundschau* (May 15, 1909).

9. *Zentralblatt f. allg. u. pathol. Anat.* vol. XX.

10. *N. Y. Med. Jour.* (Sept. 15, 1910.)

11. *Medical Record* (Aug. 13, 1910).

12. *Zeitschrift für Physiologie und Diätetische Therapie.*

13. *N. Y. Med. Jour.* (Mar., 1909.)

14. *Monthly Cyclopaedia and Bulletin* (July, 1910).

Scientific Temperance Journal

Founded by Mary H. Hunt

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each

Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered as second class matter June 1, 1909, at the postoffice at Boston, Mass., under the Act of March 3, 1879.

"The Christ-child comes with soft light feet
To touch earth's paths and make them sweet.
Where'er those shining footsteps fall,
New hope and light are over all.
New love springs up beneath their tread;
New glory on the old is shed.
And whoso follows where they go,
Tastes a deep joy no others know."

One Antidote for Pessimism

IN the swift changes in social and business customs, the transformations often come so quietly that their full meaning is only partly recognized.

Mr. John Graham Brooks, in his recently published life of W. H. Baldwin, Jr., touches upon one of these changes in relating Mr. Baldwin's experience with the drink habit among railroad men when he entered the railroad business in the eighties. He found that the men "dropped into the saloon to drink or to treat each other during working hours. They took away a pint bottle of whisky to use on the train, along the track, or in the shops. Every now and then it brought mischief, a quarrel, a blunder, slovenly work, and always the possibility of something worse."

Recognizing these conditions, Mr. Baldwin undertook first to provide a place where men might find recreation and opportunity for social intercourse other than the saloon, and having done this he felt he might justly require, and in the requirement secure the co-operation of the men, that drink should not be used while on duty, because of the common danger to the public and to trainmen in drinking during service.

"All this," comments Mr. Brooks, "has become the merest commonplace of railroad management, but it was not a commonplace at that time," twenty-five years ago.

Among many railroads, there has been advance beyond even this position taken by Mr. Baldwin, in recognizing the fact that the effects of drink taken while off duty do not im-

mediately pass off, and therefore, that entire abstinence is necessary for the man who has to do with the managing or dispatching of trains; in other words, that the railroad man is always on duty.

One economic revolution like this in a quarter century though not yet completed helps serve as an antidote for any temporary pessimism over the slow progress of the reform.

When Evolution Begins

IN his address at Cairo, Egypt, Mr. Roosevelt reminded his hearers that "the training of an individual to fit him to do good work in the world is a matter of years, and the training of a nation to fit it successfully to fulfil the duties of self-government is not a matter of a decade or two, but of generations."

While it is self-evident that all real reforms come by evolution and not by revolution, and that patience with the slow rooting and growing of moral or social reform is necessary, it must be remembered that such evolution must begin sometime and somewhere. The man of this generation who shirks his duty in making some truth better known, or in contributing his quota of effort here and now to the world's betterment is by so much delaying the coming of "that great race that is to be . . . with sweeter manners, purer laws," however much he may dream of this as somewhere in vague futurity.

The training of the individual of fifty years hence must begin with the lives and institutions of today. The training of a nation with high ideals of self-government, whatever the failures of the past, may and must begin in the nation today.

The Inventory

THIS month, instead of the usual general articles, our columns are devoted chiefly to a review of a year's progress in scientific appreciation of the relation of alcohol to the individual and to methods of disseminating these facts. As in business, so in philanthropy, education, and reform, an annual "taking account of stock" is necessary not only for the broader outlook and encouragement it may give, but as a time of considering and revising methods of work individually and collectively in their bearing upon the world's work as a whole.

Believing that many persons, especially physicians, will be interested in a review though brief, of current medical observations on the alcohol question, this number of the JOURNAL goes to many such readers. If also interested in the work of the Federation, their cooperation is earnestly invited.

Some Steps in Education Against Alcoholism

By Cora Frances Stoddard, A. B.

Corresponding Secretary of the Scientific Temperance Federation

THERE will be no true and lasting progress towards lessening the use of intoxicants until there is a shift of public sentiment; and that sentiment must be shifted through education, reason, logic."

Growth of the Scientific Education Idea

This sentence quoted from a recent editorial in a Boston daily is but one of many indications of the growing public recognition of the necessity of education of public sentiment on the alcohol question, especially on scientific and economic lines.

It is true that there has been little time in the past century when some phase of education of temperance sentiment has not been carried on, yet the significance of this modern recognition of the importance of education lies in two facts: First, that it comes at a time when the struggle to legislate the evils of alcoholism out of existence is probably the most acute in the history of the battle against alcoholism, and is based upon a consciousness that legislation to succeed must be built upon and buttressed by education. Secondly, the educational aspect of this subject is beginning to command the interest, respect, and co-operation of social and economic forces which hitherto have not given either much sympathy or assistance to the temperance movement as such. Physicians, social workers, life insurance officers, magazine writers, correspondents, and editors of the public press, who are thoughtful observers of present conditions, here and there, but in increasing definiteness, are expressing their conviction as to the fundamental importance of educating the people as to why the drink habit is unsafe, and as to the feasibility of this method which has so amply justified itself in the tuberculosis and other social or hygienic campaigns.

The Provident Savings Life Assurance Society of New York has this year issued to its policy holders a health bulletin for the correction of popular fallacies in favor of drink by a plain statement of the scientific facts. *The Sunday School Times* in its last temperance number published an article by the Medical Director of the same company setting forth some of these scientific facts which he declared show "that in addition to such moral objections as may exist to the custom of alcoholic indulgence, we now have well-grounded scientific and economic reasons for condemning it."

The Associated Charities of Boston has or-

ganized a committee this year to promote popular education in these scientific facts, on the principle that "first and foremost the public must be educated as to what alcohol actually is and what its real effects are, for the real solution of the alcohol problem will come only when public opinion has been aroused to full realization of the harmfulness of alcohol."

A recent article in the *Survey* summarized the scientific facts about alcohol as already ascertained. Another, on the Social Aspects of Alcoholism in the same periodical urged a continuance of the scientific gathering of facts. "Facts," the *New York Evening Post* said, in commenting on the article, "are essential. . . . The scientific battle is but just beginning. . . . Science must lay down general laws and acquire without loss of time necessary information for the use of social workers if the whole problem is to be attacked intelligently."

A correspondent of the *New York Times* cites the work of Kraepelin and Metchnikoff as evidence that "the time is very near when science will give an unvarying answer against the beverage use of alcohol."

Another, writing to the same paper, quotes a medical statement against alcohol, saying "even if this statement is only partly true, it would seem to be wise to let alcohol alone. . . . When the leaders of medical science have published their findings, the intelligence of the people will be appealed to in the only way that will promote real prohibition."

While the Scientific Temperance Federation is concerned primarily with this education and not with legislation, it is self-evident that wise legislation will be the active expression of an intelligent people, and that for the permanent success of legislation, whatever may be the form it takes, we are absolutely dependent, upon not the sympathy of a passing sentiment, but upon the intelligent purposefulness of a people who understand the fundamental principles of the physical, moral, and social dangers in drink itself.

"Men will have the courage of their convictions, when they have convictions enough."

An Unavoidable Issue

That this in the battlefield of the immediate future is evident from the fact that a large proportion of the millions of pages of

*From the annual report of the Scientific Temperance Federation, 1910.

pro-alcohol literature, of the bill boards and newspaper advertising which, on their side, constitute an enormous educational campaign for drink, is especially directed to creating and deepening the idea that alcoholic beverages used moderately are not only harmless but beneficial.

The logical conclusion of this tenet as expressed last year in an address by H. O. Heinemann before the Chicago Section of the Society of Brewing Technology is that "since the temperate use of alcoholic relishes is good, wholesome, beneficial and right . . . there should be places for the public dispensing of them. . . . If the use is sanctioned the traffic must be."

It is to this end that the United Societies of Chicago are reported to have declared war upon the present temperance teaching in the schools of Illinois. According to Chicago papers, they propose to wage a fight on the present school text-books "because the word alcohol is taken to cover all drinks. When the children see their fathers and mothers enjoy these drinks," it is said, "they begin to lose respect for them. Light wines and beer are healthier than tea or coffee and, often, than the best water we can get. Beer is the national beverage of Germany, noted for its men of superb physique, its high moral standing, and its temperance."

Entirely ignoring the great educational temperance movement in Germany today in royal, official, scientific, business and educational circles, these German-Americans apparently propose to try to force upon America customs of Germany which are being vigorously combated in that very country.

Popular Literature

Allusion was made in the last report to the importance of placing German facts from German sources in the hands of German-Americans. Since the attack on the school teaching is being made on the ground that it is anti-German, the necessity for this special German work is increasingly apparent, and we are urging it in every possible way.

Considerable German literature has been imported by the Federation for distribution in the middle West to meet this need. From a Wisconsin town came a call for good Hungarian literature. This, too, we have lately been able to supply by the co-operation of foreign correspondents connected with Austrian and Hungarian temperance work.

Six new leaflets have been published this year in co-operation with the Presbyterian Temperance Committee; others have been reprinted. An equivalent of more than 760,000

pages of literature in three languages has been published, or purchased and resold, for in this we have held to the policy early adopted by the Federation to use good material wherever found. Many thousand copies of *Alcoholism and Tuberculosis* were distributed in the churches on Tuberculosis Sunday in May.

Literature Distribution

A beginning has been made in Massachusetts in the systematic distribution of scientific temperance literature through the year in the effort to create an intelligent public sentiment as a preliminary to the annual no-license campaigns. This is especially recommended as work entirely suitable for Young People's Christian Societies, some of whom are already organizing for this purpose.

A helpful suggestion for the individual dissemination of literature comes from the Catholic Total Abstinence Union of Ohio. In connection with the Union there has been organized what is called the League of the Cross, one feature of which is that certain members agree to distribute each year two dollar's worth of temperance literature. This is a plan that calls for no complicated organization and requires no regular attendance at meetings, but which gives one who is interested a purpose in individual work or in promoting education by literature through any organization that he may choose to ask to assist. The president of this League is heartily co-operating with the Federation in the distribution of our literature.

Use of the Press

Educational effort is greatly multiplied by the increasing readiness of the press to open its columns to scientific facts. Hence, it is to be hoped that in the coming year we may be able to plan definitely to issue our Press Circular at regular intervals not exceeding two months. Many papers can be reached in this way that would not take mere reprints from a temperance periodical, while it is desirable that the circular be issued often enough that its facts may be thoroughly up-to-date. Though but one Press Circular as such has been published this year, we have, nevertheless, supplied several special articles for periodicals of wide circulation, and the SCIENTIFIC TEMPERANCE JOURNAL has been quoted liberally by others.

Beginning with the February number, a page or more of scientific material has been furnished the *National Advocate*, monthly, and since July the *Advocate* has also published each month about a column of information about current work of the Federation or

suggestions as to educational needs and methods.

Mr. Wright's two articles in the *Christian Endeavor World*, "How Alcohol Pulls Down," illustrated by our diagrams, brought inquiries from all over the country and from abroad.

Temperance information is regularly supplied the *Sunday School Times* under the head of "Temperance Nuggets" for the quarterly Sunday School temperance lesson, and with the new year other distinct lesson helps are also to be furnished the *Times*.

An article "Sobriety as an Asset," illustrated by diagrams, was prepared for the September number of *Physical Training*, organ of the physical training department of the International Young Men's Christian Association.

The *War Cry*, the official paper of the Salvation Army which goes all over the world, used by permission three of our scientific diagrams.

Special articles were prepared for the *Presbyterian Banner* and the *Presbyterian Advance*.

One article was written for the *Christian Herald*, one for the 1911 *Year Book* of the Presbyterian Temperance Committee of Ireland, and a comprehensive review of progress in science for the forthcoming 1911 American *Prohibition Year Book*.

The periodicals in which the special articles appeared reach not less than 1,000,000 readers.

Our exchanges show that, exclusive of our own columns in the SCIENTIFIC TEMPERANCE JOURNAL, material which we have prepared has furnished about 175 columns of scientific temperance information, appearing either as original matter or as reprints in the papers of 19 states and in Canada. There is undoubtedly much more which has not come to our notice.

Public Addresses

During the year, 221 addresses have been given by the secretary and the assistant editor of the JOURNAL, Miss Wills. Some of these were before public schools, including high schools, which had been persistently closed to outside temperance speakers. About 3,500 young people were thus reached in one city alone. General audiences have included the National Grand Lodge of Good Templars, the New York State Woman's Christian Temperance Union, the Vermont State Sunday School Association and Grand Lodge of Good Templars, the Massachusetts State Christian Endeavor Temperance Conference, two State

No-License Conferences, the Boston Young Men's Congregational Club, churches, women's clubs, men's church brotherhoods, Sunday Schools, Christian Endeavor Societies, teacher's meetings, ministers' meetings, Young Men's Christian Associations. Mention should also be made of addresses on this subject by Mr. Magwood and Mr. Wright, besides those of Rev. E. O. Taylor. The public work has been largely done in the four states of New York, Vermont, New Hampshire and Massachusetts.

The stereopticon lecture has been frequently used. Many slides, and in some places complete sets, have been sold for use in the middle west. Some new slides have been prepared this year. Special changes desired by the International Y. M. C. A. have been made and six sets of slides with the accompanying lecture sold for use through the physical training department of the Y. M. C. A. Through the courtesy of the educational secretary of the Y. M. C. A., circulars and illustrative literature were sent by him to over 100 educational secretaries of this organization throughout the country.

The Object Lesson of Charts

If we may judge by the demand for them, the charts continue to be a surprisingly attractive and convincing feature of the work. Practically all the public addresses have been illustrated by either some of the charts themselves or the stereopticon reproduction of them. In addition to the occasions already named under the head of public addresses, the charts were shown as exhibits at the World's Sunday School Convention in Washington, at the National Educational Association which brought, it is said, 30,000 teachers to Boston, at the National Convention of the Catholic Total Abstinence Union in Boston, at the Nebraska State Sunday School Association, the Ohio Catholic Total Abstinence Union Convention, the Delaware State W. C. T. U. Convention, the Massachusetts State Christian Endeavor Convention, New York East Methodist Episcopal Conference, teachers' institutes, and the Nova Scotia General Provincial Exhibition, where as our correspondent informed us, they were a part of "the first temperance exhibit ever held in connection with the exhibition and were highly commended in the press."

On the Pacific coast, reproductions owned by Miss Marie C. Brehm, one of our members, were used as a temperance exhibit at the State Fair at Salem, Oregon. A set is now on its way to the California State Teachers' Association where 3,000 teachers are expected, and several charts with other pedagogical matter

are a part of an exhibit on public school hygiene which is being arranged by the Boston public schools.

In addition should be mentioned short-time rentals of the charts for a great variety of purposes. The demand has been so great that although we now have nearly four full sets it has frequently been difficult to keep enough on hand for our own use in public addresses. The appreciation of their usefulness has been best expressed, perhaps, by the secretary of the Nebraska State Sunday School Association, who wrote: "You have in these a very great means of arousing interest where it needs kindling, and of quickening and deepening interest in the minds of thoughtful men and women."

Correspondence

As usual, the correspondence of the Federation has brought many inquiries for information not only about the educational resources available, but for specific data desired for addresses, sermons, and books. JOURNALS and other literature were sent to all the county superintendents of schools in Alabama for the new temperance day now legally required in the schools of that state. Suitable literature and helps were sought from several states where special temperance campaigns were in progress.

About 3,600 personal communications have been sent to correspondents in every state in the United States, to many of the Canadian provinces, Hawaii, Australia, New Zealand, Germany, Austria, Hungary, Switzerland, Bulgaria, Spain, Denmark, England, Wales, and Ireland.

The Library

In connection with the correspondence for information the cataloged library which has been thoroughly reorganized in the last four years has been of increasing value, and every special investigation made in answer to inquiries, if material had to be sought outside, has been added and has thereby enriched it so much. The card catalog now includes between 4,000 and 5,000 indexed references.

In this connection may be mentioned the work on nearly a dozen recent school textbooks in suggesting additions or changes to ensure accuracy or adequacy of treatment of the subject of alcoholic drinks and other narcotics. This brought cordial, appreciative responses from several authors who promised changes in next editions in accordance with suggestions made, and in one instance a request that another book on the same subject be reviewed for similar suggestions.

Affiliations

The affiliations with the National Temperance Society early in the year has brought not only increased financial strength but has opened other opportunities for work. Generous space has been given in the *Advocate* to advertisements of Federation work and literature; club rates on the *National Advocate* and *Scientific Temperance Journal* have been agreed upon and advertised in both journals. Appreciative recognition is made to the National Temperance Society for its co-operation which has so materially aided in continuance and extension of this work.

Mention should be made also of the helpfulness of officers of the Federation other than the secretaries and of other friends of this work in opening doors for service which in many cases have led to unanticipated and influential opportunities.

A report of a year's work for the sake of concreteness, must often deal largely with statistics. But statistics are of value only as interpreted in minds opened to the truth, lives touched to intelligent sympathy with the burden of misery and inefficiency entailed by alcohol on humanity and society, determination quickened to new and better service in making the truth known. The full fruition of educational work of any kind does not come in a day or in a year. It often involves not only sowing the seed but preparing the soil. It requires heavy investment of money and especially of personality.

But the outlook of educational temperance work in America was never more encouraging. It will require the just, yet sympathetic, appreciation of the scientific fact in its vital relations to individual and social welfare, the using of it without exaggeration and yet as far as its truth will warrant, the laying hold with it upon the constructive forces in youth, business and the growing sense of social responsibility.

Insanity in Germany has become so common that a German Psychiatrist (Medical Councillor Fischer) has extended insurance to insanity.

"The idea of insuring against insanity may seem strange at first sight; but insanity is not so rare and when it occurs it affects the life of the family quite as much as any other misfortune against which insurance is commonly secured. In Nuremberg there has been for twenty-five years a society that makes a business of such insurance.—*Journal American Medical Assn.* (Aug. 20, 1910.)

Class=Room Helps

Conducted by Edith D. Mills

Answering Eloise

FOR INTERMEDIATE GRADES

"I DON'T see why you don't want me to drink sweet cider, Mamma," said little Eloise Maynard with an unmistakeable pout, "Jessie and Mertie drink it and they think it's just lovely. If apples are good isn't the juice good, and it looks so nice and sparkly, too. Mayn't I have some tomorrow?"

Mrs. Maynard paid no attention to the pout and with a little air of mystery said, "You needn't wait until tomorrow, my dear, for a fine little cider mill was brought into the house just this afternoon. It has two rows of nice white stones for grinders. You can run it yourself and have some cider today."

"Oh, goody, Mamma! Where is it? May I see it?"

Mrs. Maynard came over to her little daughter with a mirror in one hand and two handsome, juicy Snow apples in the other, and holding the glass before her said, "Open your mouth Eloise and see the beautiful little 'millstones'. Here are the apples for the cider. Press it out as soon as you please."

Eloise couldn't help laughing at her mother's sly joke and set the "mill" to work at once. Then her mother said, "We will take a ride over to the public cider mill tomorrow and see if we prefer to have our work done there instead or at our own mills."

The next day they took a beautiful drive of two miles over to the mill and they filled their lungs full of the crisp October air. But before they drove into the mill-yard Eloise turned up her nose in disgust. "Oh Mamma," she said, "what is that horrid, sour, rotten-apple smell?"

"We shall see in a minute" said Mrs. Maynard. Sure enough, the explanation was at hand. There were great heaps of apples, many very dirty, wormy and rotting, apples that were good for nothing else but cider or the pigs. The sacks and presses and the tubs had been used over and over without washing and they were sour and unclean. There were a few bubbles rising in the cider in the tubs under the press.

"Are all public cider mills alike, Mamma?" said Eloise slowly.

"Some cider-makers take a little more pains than others and some lots of apples aren't quite so bad as these but on the whole I think

cider mills are pretty much the same," replied her mother.

"Ugh! if that's the way it's made I don't want to drink it," said Eloise.

WHAT THE MICROSCOPE SHOWED

"Mamma," said Eloise as they watched the men, "if we had a barrel of cider made of good apples in a clean way it would be just as good for us as good apples wouldn't it?"

"That would depend, my dear," said her mother. "Suppose you wait until after tea and ask your papa to help you answer that for yourself. To help him I will take home a little bottle of cider from this tub."

Eloise could hardly wait till tea was over to say, "Papa, if apples are good for us wouldn't clean cider be good too?"

"Let us see what Mr. Microscope says about it," said Prof. Maynard. Consulting Mr. Microscope was a favorite game at the Maynard home. "Bring a bit of yeast cake, the bottle of cider your mother brought home and an apple that has not been washed or polished."

First he put the crumb of yeast cake in some warm water and then he put a little of the water on the slide of his big magnifying glass. He set it just right for her eyes and asked her to look.

"O-o-o-o-!" said Eloise, "Why papa I can see just lots of tiny things. They look like little foot-balls made out of jelly. Some of them have little buds growing out too. What are they. Are they alive?"

"They are yeast plants and they are alive," said her father. "If you were to watch a little while you would see that many had buds and that those grew big and lived by themselves. They increase very fast too."

"Now I will put a drop of this cider from the cider mill on the slide. Look sharp and tell me what you see now."

"I can see once in a while one of the jelly foot-balls," said the little girl. "Whyee! they look just like the little yeast plants. Where did they come from? We didn't put any yeast in the cider."

"Perhaps the apple can tell us," said Prof. Maynard. "Rub the skin a bit with your finger and see what happens."

"It's dusty, but I don't see what that has to do with yeast cakes," she said with a puzzled air.

Her father laughed and carefully washing the apple in a very little water put some of the water on another slide and asked her to look again.

"Oh, I know how the little plants got into the cider," she cried clapping her hands, "they were washed off the skins of the apples. But how did they get on the apples?"

"I will tell you," said her father. There are different kinds of the yeast plants, all very tiny and light. Some are the kind which are pressed together by the millions into yeast cakes and there are others which float in the dust in the air and are called wild yeast. It is these that settle on the apples and other fruit. See these grapes have them, too, as the microscope would prove."

"You said, papa," said Eloise, "that they are alive. How do they get their living and what do they do?"

"I was waiting for you to ask that question said her father, for that brings us back to your first one of why if apples are good, cider isn't good also."

"The little yeast plants are not only alive and able to bud and multiply very fast but they can eat too and like some little boys and girls they like sugar best of all. Indeed that is what they live on, the sugar in sweet liquids such as the juice of apples, grapes and blackberries. When they have eaten the sugar it is changed into a sharp, stinging liquid called alcohol and a gas which passes off in bubbles. So the nature of the drink is entirely changed. After a time there is as much difference between the fresh fruit juice and cider and wine as there is between sound apples or grapes and rotten ones."

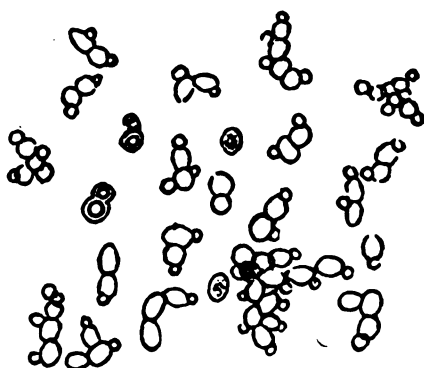
"When the juice is changed by the little yeast plants would it harm us to drink it?" said Eloise.

"Over in Europe," said her father, "where there are many grapes and apples much wine and cider are made and drunk. These drinks are given to boys and girls. One doctor¹ tells us that of the children who had these beverages many did not have plump, rosy cheeks and that they did not grow so well; they could not study their lessons as well or remember them as well³; besides, a number were very naughty. Another doctor whose work was in a hospital² said that the children who were given these drinks were more likely to get diseases like diphtheria and when they did were much more dangerously sick. And

other great teachers and doctors tell us that many of the drunkards who came to the hospitals very sick and even crazy began when they were young to drink the drinks in which the yeast plants had worked and made alcohol. These men became poor and often wicked as well as sick because of the alcohol in the drinks but they could not stop drinking it. That is the dreadful thing about the alcohol it may make one want it so much that he loses his power to stop."

"If those drinks could harm the children in Europe they could harm us couldn't they? But, Papa, why do they let the children drink such drinks?"

"Because," said her father, "it is only a few years since a wise Frenchman's microscope⁴



Yeast Plants

helped him to discover the little yeast plants and how they can change good fruit juices and grain juices, too, into alcoholic drinks and it is not very long since other wise men found out exactly about the harm that even small amounts of alcoholic drinks can do to both children and grown people. So, many of the people do not understand it fully. When they do probably they will no more think of drinking alcoholic drinks which can make them sick than they will of purposely exposing themselves to germs that cause consumption and other diseases."

"Isn't there any way of keeping the yeast plants out of the fruit juices, Papa?"

"How does your mother keep her peach and apple sauce for winter?" asked Prof. Maynard.

"I know, she boils it and cans it up tight. Is it to kill the yeast plants in it?"

"That is just the reason," said her father. "She scalds the jars and scalds the fruit and then seals it up tight so that none of the yeast floating in the air can get in and then it keeps sweet and nice till she wants to use it. Clean apple or grape juice canned in the same way could be kept nicely, too, and I think she

1. Dr. Imri Doczi, Budapest.
2. Prof. Demme, M. D., Zurich.
3. Prin. Emanuel Bayr, Vienna.
4. Pasteur.

The Individual Balance Sheet

JOHN DOE

In account with

ALCOHOLIC DRINKS

Dr. <u>Supposed advantages of drinking.</u>	<u>Disadvantages liable to result.</u> Cr.
Physical strength and endurance lessened. Reason, judgment, memory impaired. Opportunities for responsible positions lessened. Liability to accidents increased. Ill-health from disease caused by alcohol. Ill-health because of bodily resistance lowered by alcohol. Possibility of poverty, insanity or crime, due to uncontrollable craving. Shortened life. Children of imperfect constitution and efficiency.	Conformity to custom. Sociability (often in undesirable company). Pleasure of the palate. A temporary sense of comfort (which means that alcohol has narcotized the nerves.) Balance. Does it Pay?

Using the Balance Sheets

THE "Individual's Balance Sheet" given above and the "Public Balance Sheet" following, together with the supplementary material found elsewhere in this *Journal* may be useful in a variety of ways.

IN THE CLASS-ROOM

In the class room they may be used as a dictation exercise without comment; they may be written upon the blackboard, or upon heavy paper chart-fashion and hung upon the wall and permitted to remain until the lessons have been absorbed.

The "Public Balance Sheet" may be given as an example in arithmetic or book-keeping or used to furnish supplementary material for the advanced physiology class.

The "Individual Balance Sheet" may provide the scheme for a Friday afternoon exercise, the various points being developed by discussion and written out, or be furnished by various pupils each of whom has previously prepared one or more topics. It will be observed that each of the "disadvantage" topics can be subdivided one or more times and each may be numbered in such a way that the topics may be given in consecutive order. The "Supposed advantages" should come first.

Correlated with English it will furnish an excellent foundation for a paper or essay. The pupils may be required to look up the topics in advance of a review in the regular textbook work and the sum total of the injury due to alcohol being thus focalized, the teaching will be better remembered and probably make a more lasting impression. Point out here as elsewhere in teaching hygiene and temperance that the disobedience of health rules will not bring all the possible untoward results nor will all suffer equally. The individual's

power of resistance has much to do with the nature and kind of the injuries he suffers from any harmful practice or contagion.

IN THE PUBLIC MEETING

There is a growing appreciation of two facts: one, that the older methods of sentimental presentation of the temperance question are in many ways outworn, and the other that the scientific side not only has a most important part to play in the temperance reformation but is, also, the freshest, newest and most interesting method of presentation.

In the various temperance and young people's organizations, in Sunday Schools on temperance Sunday and by ministers and by other individuals and societies, working for social betterment there is a constant call for something in the way of a temperance program that is new, up-to-date, interesting and worth while. Granges, also, and other societies which discuss so many problems relating to the welfare of the individual, the home and the community can do no better than occasionally to devote the time given to the "good of the order" to a live discussion of this problem which affects each more than almost any other.

For all such meetings we suggest the use of the "Balance Sheets" as a scheme for the address or for the program. Among the various methods likely to work well the following may be mentioned:

At least a week beforehand assign the topics (which should be numbered consecutively) to those who are to take part in the program. Give one or more to each person who is to look up and write out or be prepared to give offhand in five minutes or less, the matter relating to his topic. It will be better to have them written as they will be more concise and

The Public Balance Sheet

THE PEOPLE OF THE UNITED STATES

In account with

ALCOHOLIC DRINKS

Dr.			Cr.
43,605 Insane,	\$ 26,803,500	National Liquor Revenue,	\$192,234,445
32,000 Epileptics,	1,600,000		
31,557 Paupers in Almshouses,	20,510,950		
Cost of 1-2 crime due wholly or partly to drink,	300,000,000	License Fees,	\$55,241,197
Cost of sickness due to drink,	72,000,000		
129,318 Lives lost by preventable disease or suicide due to drink,	219,840,600	Deficit,	\$393,189,408
	<u>\$640,755,050</u>		<u>\$640,755,050</u>

accurate and some will find it easier to read than to try to speak even for two moments. If the leader thinks best he may himself prepare the slips containing the topic and pass them out at the beginning of the meeting.

NOTE. The facts for the items will be found elsewhere in this JOURNAL or largely in the articles "How Alcohol Pulls Down," *Christian Endeavor* World (May 26, June 2, 1910) or in article by H. S. Williams, M. D., *McClure's*, October, 1908. (Reprints of this article can be obtained from the JOURNAL at \$.05 each, \$.50 per doz.)

At the meeting the leader may make some short preliminary remarks and then call upon the participants. Ask just what supposed advantages there are in the beverage use of alcohol, calling upon Number 1, who promptly rises and gives all or a part of the reasons, therefor, in a bright, attractive manner. The leader who has copies of the "Balance Sheet" in hand for ready reference writes in the item on the balance sheet drawn on a large blackboard, or on large sheets of paper. (In the latter case large sheets of wrapping-paper may be pasted together and charcoal or colored crayons used.) Thus one after another responds with the statements relative to his item which is entered in the "Sheet" as before.

The "Public Balance Sheet" items follow in like manner, the leader seeing to it that the program moves briskly, thought not flippantly, forward. At the close he may read the results thus set forth or may otherwise summarize and clinch facts.

If the blackboard is not available the plan can be carried out in other respects and will prove very interesting.

Another method would be: have not more than four participate, one for each of the four parts, each writing a paper, the time for reading of which is limited according to the value of his topic and the whole time to be devoted to the program.

The first method will work out very well for a temperance lesson where the whole Sunday School takes part.

In that case, as in the case of large societies, the topics can easily be subdivided and

members from each class may respond briefly when called upon.

The superintendent may well divide the work by giving each teacher charge of the items for her own class. Sunday School teachers will find it easy to adapt the plan to individual class instruction.

Additional material along all these lines can be obtained in leaflet form of the publishers of the SCIENTIFIC TEMPERANCE JOURNAL. If leaflets covering these points are distributed at the close of the meeting the facts will be clinched and in a no-license campaign would prove very helpful.

REFERENCES

REFERENCES for the impairment of physical strength and endurance (p. 51) and of the mental faculties (p. 51-2); liability to accidents increased (chart p. 53); ill health (pp. 49, 50, 52); shortened life (p. 64); effects on children (p. 53). (See further references on all these points in earlier Journals.)

Opportunities for positions lessened. The United States Department of Labor found after inquiry among several thousand business men and corporations, that 90 per cent. of railroads, 79 per cent. of manufacturers, 88 per cent. of trades, and 72 per cent. of agriculturists replying to the inquiry discriminate against drinkers. (Barker).

National revenue (compiled from internal revenue reports); and license fees, city, county and state, (1902) (compiled from U. S. Census Report, *Prohibition Year Book*, 1910).

There are 43,605 insane persons in the United States chargeable to drink and it costs over \$5,000,000 to care for them. Valued at even \$500 per life we have a further loss in the insane and feeble-minded of \$19,754,000, the total loss mentioned. (Based on report of U. S. Dept. of Commerce and Labor, 1903. Percentage due to drink, over 20 per cent. Rosanoff et al.)

Epilepsy. European physicians have found a history of hard drinking in parents among nearly 50 per cent. of all epileptics. Dr. Podstata of Illinois says that of these unfortunates one in four "might if they knew enough, point the finger at their parents and say, 'it was you, by your [alcoholic] habit that brought me to this.'" But taking the more conservative estimate of Dr. Rosanoff (*McClure's*, Mar., 1910) of one in five we have an army of 32,000 defectives, many of whom are entirely incapacitated and require support and care, others only slightly. A loss of ability in only 10 per cent. of these would mean a total loss of \$1,600,000 annually.

Pauperism. (Based on Report of the U. S. Dept. Commerce and Labor 1903.) In 1895 the Massachusetts Bureau of Statistics of Labor found that about 45 per cent. of pauperism was due to drink. This number is based on the percentage of the Committee of Fifty. Estimated cost each, \$150 per day, plus loss in productive capacity.

Crime. The Committee of Fifty have found drink to be at least one cause in half of all crime. Other authorities place the proportion from 70 to 90 per cent. This cost of crime estimated by Higgins, quoted from Prof. J. P. Norton, *Jnl Am. Med. Assn.*, Sept. 29, 1906.)

Something New

Special attention is called to the chart reproduced on the back inside cover of this JOURNAL for educational purposes. It may be had in quantities at reasonable rates without printing on the back. It is hoped to make this one of a series of charts to be similarly issued.

The Supposed Stimulating Effect of Alcohol

IS alcohol ever a stimulant?" asks Dr. G. W. Ives,¹ and, on the whole, the case is very well summed up in his reply to the question although it is perhaps, as yet, too much to say that the evidence is overwhelming. He says:

"In the minds of the laity it certainly is [a stimulant], and I fear not a few physicians so regard it. Overwhelming evidence, however, proves it to be just the opposite, that is, a narcotic, an anaesthetic; it is a vaso-motor inhibitory and cardiac [heart] depressant, in large doses paralyzing this organ, and this in spite of the fleeting feeling of well-being, due to its vasor-dilator action and so to increased flow of blood to the parts."

In discussing "General Principles in the Management of Diseases of the heart" Sir James Barr of Liverpool, said²:

"It should be urged that alcohol is not a real cardiac stimulant."

An original research to ascertain the effect of alcohol upon the circulation conducted and reported³ by Dr. Clyde Brooks of Chicago, resulted in the conclusion that—

"By whatever method administered, alcohol, when circulating in the blood stream, causes a gradual, progressive lowering of blood pressure with decrease in amplitude but increase in rate of heart-beat."

In an article on the use of alcohol to recruit the strength after sickness Dr. Emilie Alexandroff says⁴ that the effect of alcohol upon the frequency of the pulse beat is not at all uniform; it increased the rate a little and sometimes slowed it. She compared her results with those of Dennig, Hindelang, and Grunbaum⁵ which indicated that a more sparing use of alcohol should be made in fevers than is now the case. They did not investigate the effects upon respiration. Alexandroff did, but concluded that the improvement of the respiration was of less consequence than the impairment of the circulation.

1. Detroit Med. Jnl. June, 1910.
2. Brit. Med. Jnl., Apr. 24, 1910.
3. Jnl. Amer. Med. Assn., July 30, 1910.
4. Corrb. f. Schweizer Aerzt., May 20, 1910.
5. Archiv. f. klin. Med. Bd., 96, 1909.

(Concluded from page 62.)

means to prepare some for us this fall. But if the juice should be left in barrels or bottles without being cared for, the little yeast plants in it would soon cause it to 'work' as we say. The bubbles rising to the top and the stinging taste would show that alcohol was coming in it and it was growing harmful. This happens very soon after the juice is pressed out. Can my little girl answer her own question now?"

"I think so," said Eloise, puckering her forehead thoughtfully, "but maybe I would forget before next fall. Will you help me to write it all down in my little book, Papa?"

"Yes, indeed," said her father.

Can you tell what she wrote?

WHAT ELOISE WROTE IN HER NOTEBOOK

(Teaching Points)

The apples used for cider are often sour, rotten and wormy.

Cider is apt to be made in an uncleanly way.

Apple juice is good for us if we press it out ourselves and drink it at once.

Cider has yeast plants in it.

The yeast plants eat the sugar in the grape and apple juice and change it into alcohol and a gas.

Drinks that have alcohol in them are harmful.

The children that drank wine or cider did not look so healthy or grow so well or learn so well as the others. They were more likely to be sick and die.

People who drink alcoholic drinks may get to want them so much that they cannot stop even when they want to.

METHODS

THE preceding story (exclusive of the "notebook" statements which are not intended to be read) may be used in connection with the regular textbook lesson on fermentation, the book supplying the points which could not well be touched in the story; or it may be used as supplementary reading in intermediate grades or read or told to younger pupils who reproduce it orally. (In the latter case use it in two sections.) After discussion the children may decide what Eloise wrote in her notebook and the statements be written on the blackboard from which they may be copied for future reference. (These points should be made definitely and with emphasis.) The members of the class may write letters explaining to a supposed friend why he or she would better not drink cider or wine. Draw the picture of the yeast cells and let the children reproduce it; use a handsome apple or bunch of grapes as a model for drawing and coloring or paper cutting.

CORRECTION

IN the review of the book "The Bible and Wine" (Oct. JOURNAL, p. 32a), the statement regarding Paul's advice to Timothy should read: "'wine for the stomach,' old writers on Greek medicine say was grape-juice prepared as a thick unfermented syrup for use as a medicament," etc.

Comparative Sickness Benefit Societies of Abstainers and Non - Abstainers

Statistics from H. DILLON COUGÉ, Public Actuary, So. Australia
Abstainers represented by diagonal lines *Non-abstainers represented by cross-hatch lines*



Copyright 1916, by
 Scientific Temperance
 Federation, Boston.

- I. Abstainers averaged only about one-half as much sickness as non-abstainers.
- II. Abstainers, when sick, recovered sooner by over four weeks, thus saving in wages and sickness expenses.
- III. Only about half as many abstainers died when sick.
- IV. Death rate in abstainers' societies was less than half the death rate in non-abstainers' societies.

The Gulick Hygiene Series

Educators agree that the first purpose of the study of physiology and hygiene should be in the lower grades, to influence children definitely towards intelligent habits of living. The child's own action, experience and observation should be made the object of constant appeal. This the Gulick Hygiene Series does. The originality of the design of these books and the scientific and effective treatment of the material is equaled in no other series of textbooks on hygiene and physiology. The series conforms to the requirements of every state law in the amount of study given to the subject of alcohol and other narcotics.

Arranged for school use and home reading in a

Five-Book Course and a
Two-Book Course.

GINN AND COMPANY

29 BEACON ST., - - - BOSTON

SPECIAL OFFER

National Temperance Advocate

A TEMPERANCE PAPER FOR THE FAMILY. TEMPERANCE STORIES, POEMS, FIELD NOTES. MONTHLY NEWS AS TO WHAT GOOD TEMPLARS, ALL CHURCH TEMPERANCE SOCIETIES, ETC., ARE DOING. JUST WHAT YOU NEED.

Advocate, \$1.00 } BOTH \$1.25
Journal, - .60 }

A New Method!

Travelling Loan Exhibit

WHAT IS IT?

Exhibit consists of 25 Colored Charts (framed or not as desired, size 22x28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other Infectious Diseases, Longevity, etc. No objectionable details. Based on most reliable scientific experiments. Excellent for No-License Campaigns.

WHO USE IT?

General Expositions
Teachers' Institutes
Charitable Organizations
Christian Endeavor Conventions
Sunday School Associations
Temperance Lecturers and Conventions
Physicians, Ministers
200,000 persons have seen these charts in two years.
Send for Full Information as to Expense and Plan for Use.

ALCOHOL in Every Day Life!

ILLUSTRATED LECTURE

of scientific experiments, and a few attractive physiological plates.

Most important phases covered. Nothing objectionable.

Subjects of Some of the Slides

Alcohol and Hard Work.
How Muscle Work is Measured.
Alcohol and Endurance.
Which Way Lies Success in Sport.
A Sixty-Mile Walking Match.
What Yale Football Men Say.
The Cost of a Mistake.
A Story for Bookkeepers.
Effect of Alcohol on Marksmanship.
Alcohol and Typesetting.
What the Shoe Manufacturer Knows.
A Healthy Nerve Cell.
What Alcohol Does to the Nerve Fibres.
Why Doesn't he Control Himself?
Where Accidents are Liable to Occur after Drinking.
Drink and Lead Poisoning.
Comparative Sickness of Abstainers and Non-Abstainers.
Drink and Impaired Vigor of Children, Etc.

Full information on request.

THE SCIENTIFIC TEMPERANCE FEDERATION,
23 Trull Street, Boston, Mass.

Bosworth Optical Company

Manufacturers of and Dealers in

STEEBOPTICONS, LENSES, GASES,
LIMES and SLIDES.

Acetylene, Oxy-Hydrogen and Electric Apparatus. The "BOSWORTH DISSOLVER" has no equal in the market. Lectures Illustrated, Slides rented, Made to Order, Sold. Operators and lecture sets with lecture furnished, etc., etc.,

No. 36 Bromfield St., - - - Boston, Mass.

Scientific Temperance Literature

Causes of Alcoholism	per 100
Facts About Alcohol	\$.15
Drink and the Doctor's Bill	.15
Alcohol and the Death-Rate	.15
Sinning Against the Unborn	.15
Alcohol and Degeneration (colored chart)	.65
Tuberculosis and Alcoholism	.35
False Claims for Wine	.35
Wine to Drive out Drunkenness	.30
Wine a Peril to Childhood	.30
Alcoholism in Wine-growing Countries	.50
Dangers in the Use of Beer	2.50
Plain Facts About Beer	.10
Sample package	.20
Alcohol and the Individual, \$.05 each. Per doz. \$.50	
Why the Cigaret is Especially Harmful (each)	.20
Boy and the Cigaret (each)	.05

592 AL
FEB
P. L.

SCIENTIFIC TEMPERANCE JOURNAL

— *Continuing the* —
SCHOOL PHYSIOLOGY JOURNAL



Kindness of
Catholic
Total
Abstinence
Union.

Copyright
1908, by
Elmer
Chickering,
Boston.

Published at -
BOSTON, MASS.

JANUARY, 1911

New Century Series

—OF—

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fulness and accuracy of the treatment in regard to the nature and effects of alcoholic drinks and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

An Educational Temperance Organization

Purpose.—To make known in every possible way, in popular form, the proved facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

Methods.—The dissemination of facts by the following and other methods: **Personal Correspondence, An Editor's Press Circular, Loan Exhibit of Scientific Charts, Popular Leaflets, The Scientific Temperance Journal, A Stereopticon Lecture.**

Its Membership

Advantages.—All members are entitled to ask for special information on temperance topics and to receive free, notices of useful new publications, samples of leaflets or other information published by the Federation.

Associate Membership is open to all who desire (1) to have fuller acquaintance with the alcohol and narcotic question which membership in the Federation affords, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance. Members' fees \$1.50 annually and all members may receive the **SCIENTIFIC TEMPERANCE JOURNAL** at the special price of 50 cents.

All contributors of \$10.00 or more annually are known as Sustaining Members. The payment of \$100.00 or more constitutes one a Life Member.

The Scientific Temperance Federation has a unique place to fill; a distinct message and work. Its aims are fundamental and practical.

THE SCIENTIFIC TEMPERANCE FEDERATION,
23 Trull Street, Boston, Mass.

Scientific Temperance Literature

	per 100		per 100
Dangers in the Use of Beer (18 pp.)	\$.05	False Claims for Wine	.35
Commercial Fiction vs. Facts About Beer	.40	Wine to Drive out Drunkenness	.30
Plain Facts About Beer	.40	Wine a Peril to Childhood	.30
What Workingmen, Teachers, Parents, Children		Alcoholism in Wine-growing Countries	.30
Should Know About Alcohol	.15	Sample package	.20
Causes of Alcoholism	.15	Alcohol and the Individual, \$.05 each. Per doz. \$.50	
Facts About Alcohol	.15		
Drink and the Doctor's Bill	.15	Why the Cigaret is Especially Harmful (each)	.20
Alcohol and the Death-Rate	.15	Boy and the Cigaret (each)	.05
Sinning Against the Unborn	.15	Avoiding a Dangerous Blind Lead (Anti-Cigaret,	
Alcohol and Degeneration (colored chart)	.65	16 pp.) (each)	.05
Tuberculosis and Alcoholism	.35		

NEW CHART SERIES WHAT YOU HAVE BEEN ASKING FOR : : : :

Inexpensive reproduction of the charts. Use them in Day and Sunday Schools. Set people thinking by displaying them in Shop Windows, Manufactories, Stores, on Bill Boards, etc.

Two of the series now ready

"Comparative Sickness of Drinkers and Abstainers" (see Jan. Journal.)

"Employers Who Prefer Non-Alcoholized Workmen" (this Journal.)

Handsomely printed in red on coated paper, size 9x13 in.

Sample of Each, only \$.05

Per Dozen, \$.25

Per 100, \$1.50

SCIENTIFIC TEMPERANCE JOURNAL, - 23 Trull Street, Boston, Mass.

Please mention the Scientific Temperance Journal when writing to advertisers.

Digitized by Google

Scientific Temperance Journal

Vol. XX

BOSTON, JANUARY, 1911

No. 5

To the New Year

By James Whitcomb Riley

One song for thee, New Year,
One universal prayer;
Teach us—all other teachings far above—
To hide dark Hate beneath the wings of love;
To slay all hatred, strife,
And live the larger life!
To bind the wounds that bleed;
To lift the fallen, lead the blind
As only Love can lead—
To live for all mankind!

Teach us New Year, to be
Free men among the free;
Our only master Duty, with no God
Save one—our Maker—monarchs of the sod!
Teach us with all its might,
Its darkness and its light,
Its heart-beat tremulous,
Its grief, its gloom—
Its beauty and its bloom—
God made the world for us!

—Selected.



Relation of the Anti-Alcohol Fight to Labor Interests*

By G. VON BUNGE, M. D.,

Professor of Physiological Chemistry in the University of Basle.

I AM glad of an opportunity to take part in a discussion of the alcohol question in your union. I believe that an earnest conference on this matter among you would have fruitful results, for what has called us together here is a general interest in the great problems of our time, of the so-called social questions. Among these questions the alcohol problem stands first.

I believe this for the following reasons:

First. You will all admit at once that health is of more importance than property. In all that is generally understood by the social question it is a matter only of mine and thine, of a just distribution of the products of labor. In the alcohol problem the question is to prevent the noblest races of mankind from being stamped with hereditary taint and perishing body and soul.

Second. The solution of the alcohol question is urgent; it allows less of postponement than the solution of all other questions. An unjust distribution of property can afterwards be readjusted, but when the whole nation is impregnated with hereditary suffering, an endless amount of evil and misery is produced which can never afterwards be remedied.

Third. The solution of all other questions will be greatly promoted by the solution of the alcohol question. For the solution of the labor question, particularly, the matter of food, strength and health of the laboring

classes is the most important preliminary. In every situation, in every problem, the working class would gain an enormous advantage in the struggle from abstinence.

Fourth. Everyone of you may paint the future of the socialistic state as you please, but on one point you will all agree: the first condition must be office-holders who have a sense of duty, who are conscientious and capable of self-sacrifice. And let me ask what undermines the sense of duty, of conscientiousness, and what is a greater source of irresponsibility, dislike and unfitness for work than the drink habit?

Fifth. Abstinence makes the working class free and independent of the property holders; for example, in the winter of 1860-61 in London, intense cold and great lack of employment prevailed and the number of those who had to be supported by the city was greatly increased covering 130,370 persons. But of the 7,947 factory hands and laborers who were members of the abstaining societies, not a single one applied for public relief. You, of course, desire that a proud, self-respecting working class, battling for their right to acquire capital should not be put in a position where they are obliged to ask alms. How very different is the condition of abstaining workmen from that of those who frequent the saloon. Do not undervalue the strength which the consciousness of moral superiority gives to men in every struggle. A sober working people will conquer and win everything that is their just due.

*Part of an address before the members of a social-democratic organization near Basle, in 1893.

WHERE LAITY'S OPINION IS COMPETENT

You have probably expected that I would speak to you as a representative of medical science. On the contrary, I must say that according to my opinion our medical and physiological knowledge is not necessary for judging the practical side of the alcohol question. If in England, 5,000,000 men in every thinkable calling keep themselves healthy, alert, vigorous and energetic without a drop of alcohol, and if life insurance and sickness insurance statistics teach us that the abstainers are much less frequently sick and live considerably longer than the moderate drinkers, that is all the laity needs to know in order to form as competent an opinion on the alcohol question as the learned physiologist.

And if that is true of the moderate use of alcohol it is not necessary for me to say anything further about the results of immoderation. You all know from your own daily experience the devastation caused by alcohol. You all know the consequences of immoderation better than I. I may, however, remind you of the statistics which physicians gathered of the causes of death in the Swiss cities, where, as you know, every ninth man dies from the results of drink.... But think what a vast amount of misery went before, how much the happiness of others was destroyed long before the drinker died, and remember also the hereditary effects, the hereditary burdens upon lives and souls.

It would, moreover, be a great error to think that the eight who did not die as drinkers were in no way injured by alcohol. The population of Switzerland can not be divided into those who die as drinkers and those who are always moderate. There are many grades between, and long before one of these is designated a drinker by the physician he can have done great injury to himself and his descendants....

THE NATION'S HEREDITARY SUFFERING

Is it possible in the face of all this misery for a true friend of man, a socialist, to stand with his arms folded and say, "Ah, well, it has always been so," or "Oh, it will be better soon?" Gentlemen, it will not be better. The evil will still enormously increase and men will finally be obliged to look to total abstinence. It is nothing but utter folly for men not to do it, to stupidly look on while thousands and tens of thousands of families are brought to unutterable misery and the whole nation is filled with hereditary suffering. Can anyone believe, moreover, that

anything can be accomplished by half-measures. Nothing is ever gained by half-measures. *The history of the struggle lies before us.* Only the most radical methods have proved good. Let everyone make a beginning with himself, break at once completely with the drinking customs and join an abstinence society....

THE SEDUCERS ARE THE MODERATES

It is not true that it is always the weak characters that are injured by following the drinking customs. Alcohol first weakens the strong character by moderate use and then corrupts the weak character by immoderate use. Every drinker was once a moderate drinker and everyone who leads others to drink leads some of them to immoderate drinking. He sets a stone to rolling which it is afterwards out of his power to stop. The seducers are not the immoderate; they have done an undeniable service by their frightful example.

The seducers are the moderates and as long as the seduction is not stopped there will be immoderation with its consequences; disease, insanity and crime without ceasing. Whoever does not know that, does not know the history of the battle against drunkenness...

What would we think if some one should say, "I am a vigorous swimmer and take great pleasure in swimming. But it is lonesome to swim alone, therefore I persuade eight others to swim with me. I know indeed very well that one of the eight will drown; but my conscience is clear. I do not ask them to drown. I only ask them to swim with me."

What is the difference between this conscienceless swimmer and the moderate drinker? Who can show that on moral grounds there is any difference. I find only one—the moderate drinker's conscience does not trouble him because there are many others as much to blame as he.

THE WORKINGMEN'S SPLENDID REMEDY

In conclusion I may be allowed to relate what a representative of moderation reports of a visit to England:

"I was in Liverpool. One day my host said to me, 'Today I will show you something the like of which is not to be found in your whole country.'

When evening came my friend took me to a building having a fine exterior. The ground floor was taken up with large shops like coffee rooms and public kitchens.

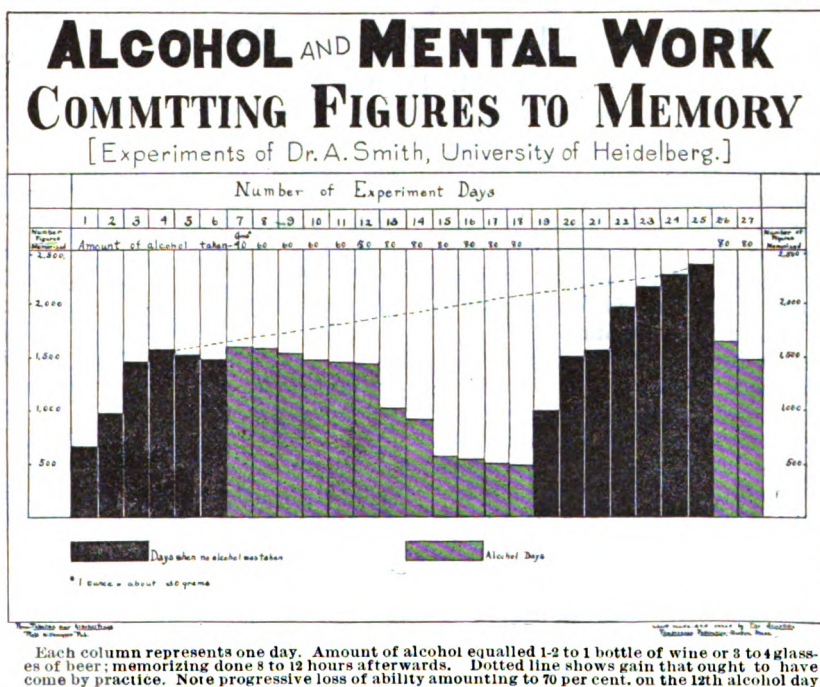
When I entered there were gathered there between 150 and 200 consumers who belonged almost exclusively to the working class. On the floor above was a beautiful hall and audience room, with a reading room opening off in which were a large number of periodicals and a library. In one corner was an office-window to a savings bank and an insurance institution. (In England at the present time there are about one and a half million working men who are insured.) And there were gathered a large number of working men, many with their wives and some with their children. The whole company were reading or talking and discussing in harmony and good humor.

"I was in a club that was founded, managed and composed entirely of work-men. No

that way and begin meeting together in some room where they could read papers and magazines and spend their evenings like rational people instead of contributing to the general brutalizing in the saloons.

"Their numbers gradually increased and allowed them to enlarge their meeting-place. They organized a society, gave out shares, and finally established this beautiful building. There is a strong force, from 1000 to 2000 workmen who instead of guzzling save what that would cost them. It means at least 4000 francs (\$800) a week, 200,000 francs a year. And with that wonders can be done.

"These people have their club as well as do those belonging to the nobility. They meet together for reading and discussion and



Each column represents one day. Amount of alcohol equalled 1-2 to 1 bottle of wine or 3 to 4 glasses of beer; memorizing done 8 to 12 hours afterwards. Dotted line shows gain that ought to have come by practice. Note progressive loss of ability amounting to 70 per cent. on the 12th alcohol day.

luxury, but comfort and strict sobriety. The building enclosed a playground on which many young people, and some older ones, were engaged in the physical exercises and sports so popular in England.

"And do you know, my friend," said my host, "what it was that called this fine building into existence and maintains it and beautifies it from day to day? *Temperance*. All the men you see here, and there are today 1200 of them, are working men who are united in a total abstinence society. Instead of spending, as they did for years before, 4, 5, or 6 shillings (\$1 to \$1.50) a week for drink, the idea occurred to some to save and put together the amount they had been spending in

frequently to hear lectures. Political speakers on their rounds come here and speak for the workingman's club is already a power with which they must reckon. Here the laborer is a man, a citizen and a voter; no one thinks any longer of denying him his right to have his say in the current affairs of the state.

"And to what is due this astonishing progress in his material, intellectual and political condition? This power, this increased value, to which his saving of his money has led, is due to abstinence."

Gentlemen, you are working for an eight-hour day. Where would you have the workman go after he has worked his eight hours to find his well-earned rest and to satisfy his

justifiable desire for mental refreshment? Shall he go to a place like the one just described, or to the saloons of our cities? And would you wait until the eight-hour day has been secured? Is it not rather a duty, a serious, solemn duty, to go to work immediately to establish for the tired working man a suitable place for him to rest in. The first step in that direction is the temperance society. We have no time to lose. Every hour brings new victims. Every hour strong, brave, good men are being carried down to destruction.

Think of all the loss of will and strength for work, of all the unfitness, of all the lost hours and days and blue Mondays. Think of all the prisoners in the prisons, of all the sick in the hospitals, of the insane in the asylums and the great number of people watching

over and taking care of these. A fifth of the total energy of the people would be saved by the removal of this poison. If all the strength and energy wasted in these and other sources of misery, and all of this energy could be devoted to improving and elevating the human race, what an infinite perspective would be opened for the progress of human happiness!

A sound policy is one that stands in harmony with the eternal laws of nature. Nature strives for perfection. A noble, beautiful, happy human race is the goal toward which all her energy is being directed. And I know of nothing that can give greater joy in life than working together in the struggle to reach this high aim toward which nature points us.

The Financial Loss of Absences Due to Drink

By R. H. SCOTT,

Factory Manager, Reo Motor Car Co.

FOR several years I have been investigating the drink question from the standpoint of the employer and the employee, and among other things, the matter of unnecessary absences.

In the Reo Motor Car Company Works (Lansing, Mich.) every second Wednesday is pay-day and after these pay-days there has been considerable loss of time on the part of drinking employees.

In order to learn definitely the extent of this loss, the time keeper was instructed to report the loss of five consecutive pay-days (ten weeks) carefully investigating each absence and rejecting all cases in which there was any doubt as to its being due to drink. Each individual was counted but once, that is, the man who after a given pay-day lost Thursday was not counted again with the men who lost Thursday and Friday, or who lost three days. However, I believe that fully 50 per cent. of the men off after different pay-days were the same ones.

The reports would fairly represent the average for the year. In the ten weeks no less than 190 employees lost from a half day to three days following the receipt of their pay. Such absences mean a considerable loss to the manufacturer for when a man fails to appear, machines and other men must wait till the man's place can be filled. Time means money. If, after a night in the saloon, the men do come to work, in their groggy condition their working ability is often impaired and they waste considerable material.

Bearing in mind that Wednesday of every

second week is the day that men are paid off, this table is very interesting.

ABSENCES FOLLOWING FIVE SEPARATE PAY-DAYS.

No. of men off	1/2 day Thursday.....	11
" " " "	all day Thursday.....	13
" " " "	Thursday and Friday.....	2
" " " "	Thursday, Friday & Saturday.....	14

No. of men off	1/2 day Thursday.....	23
" " " "	all day Thursday.....	27
" " " "	Friday.....	21
" " " "	Thursday, Friday & Saturday.....	19

No. of men off	all or part of Thursday.....	24
" " " "	Thursday and Friday.....	1
" " " "	Thursday, Friday & Saturday.....	9

No. of men off	1/2 day Thursday.....	11
" " " "	all day Thursday.....	14
" " " "	Thursday and Friday.....	1
" " " "	Thursday, Friday & Saturday.....	9

No. of men off	1/2 day Thursday.....	8
" " " "	all day Thursday.....	13
" " " "	2 1/2 days.....	5
" " " "	Thursday, Friday & Saturday.....	9

The wages of these men average \$2.25 per day. It will be noted that after the five pay-days, 56 men "celebrated" for three days each, (i. e., Thursday, Friday and Saturday) at a personal cost to them of \$6.75, or, each man sustained a loss equal to about 25 per cent. of his two week's wages.

The men who form the drinking habit to such an extent that they are away from their work two or three days after pay-day, generally keep it up as long as the firm for which

they work will stand it. When men are scarce they may hold their positions for a considerable length of time. At the present time, however, we would not tolerate this, as we are in position to get sober men.

As a result of my investigations, I believe that drink causes serious financial loss to both the employer and the employees; and that it

results in a lower wage scale to the employee, made necessary by the fact that he is not as efficient as a sober man, and that the employer is compelled to have his investment in machinery, buildings, etc., standing idle, resulting in a loss of production and business, especially at a time when he is behindhand on his orders.

❖ ❖ ❖

"To the man who is actively engaged in responsible work, who must have at his command the best that is in him at his best—to him I would, with all the emphasis that I possess, advise and urge, leave drink alone absolutely. . . . He who drinks is deliberately disqualifying himself for advancement. . . . Personally, I refuse to take such a risk; I do not drink. . . . With hardly an exception the men who are incapacitated first during the preliminary activities of any campaign are the drinkers. The same is true in every effort of life which demands the best energies of a man".—President Taft.

❖ ❖ ❖

The Locomotive Brotherhood's Rules

BY WARREN S. STONE

Grand Chief, Brotherhood of Locomotive Engineers.

THE question of temperance is one of the cardinal principles of the Brotherhood of Locomotive Engineers, and is as strictly enforced as any of the other laws of the organization. No man can drink, either, off duty should it become known to the members of the organization, without being expelled from the order.

I represent a class of men who above all others, require a clear brain, and for that reason if there is any one thing that we fight first, last, and all the time it is the question of drink. In these days of fast time, congested traffic and heavy trains, the engineer in the cab of a locomotive needs all the brains he has and he can not afford to have them muddled with alcohol. I not only preach total abstinence, I practice it as well.

Ten years before any of the railroad companies required this, we had these laws forbidding the use of intoxicating liquors in our constitution and by-laws. Many of our railroads have become so strict at the present time that they will not employ as a beginner a young man who uses cigarets because one eventually leads to the other. Cigarets and intemperance go hand in hand, and one is about as bad an evil as the other; when you combine the two, such a young man is not of very much account in railroading in the present age. For that reason, companies are taking a very rigid stand upon both.

There is no question but what the man who does not use intoxicating liquors is a better man in every respect, physically, mentally and morally, and for that reason the organization

is fighting with all its might to keep its men up to the very highest standard of American citizenship, not only to be good engineers, and good members of the organization, but to be high class citizens, such as the world at large could be proud of. There is, perhaps, no other class of men in the world upon whom so much depends as upon the locomotive engineer. If there is anything in Darwin's theory of the survival of the fittest, it is represented in the engineers of America, in their locomotive cabs today.

Law of Michigan

No person shall be employed as engineer, train despatcher, fireman, baggage-man, conductor, brakeman, or other servant in any of the operating departments who uses intoxicating drinks as beverages.

What the Accident Insurance Company Advises

Wherever possible it is advisable to prohibit absolutely the drinking of intoxicants during working hours. No man under the influence of liquor, even slightly, should be permitted to remain in the works, much less to work. A man whose nerves have been rendered unsteady by the habitual use of alcohol or by a recent debauch should not be permitted to operate dangerous machinery or to carry on dangerous work. He endangers not only his own life but the lives of others."—From a pamphlet issued by the Fidelity and Casualty Accident Insurance Company.

Alcohol Makes Hard Work Harder

BY W. PFAFF, M. D., MUNICH

THE influence of alcohol extends even to the muscular apparatus. When we remember that during physical labor the blood stream flows more strongly than at other times to the muscles, the more pronounced effect of alcohol used during work by agricultural and other hard laborers is easily understood and it explains why they travel homeward from their work with heavy, languid gait, as if their limbs were loaded with lead, and instead of becoming nimble and elastic from their work, they become stiffer and more sluggish in consequence of the use of alcohol and the frequently accompanying insufficient diet. The muscular apparatus becomes fatigued much sooner under the influence of alcohol than without, as various investigators have made clear and indubitable by experimental researches, a fact that had been evident before to the objective reasoner from experiences in daily life. The thick tongue and the stiffness of the intoxicated person who can scarcely raise his glass to his mouth, and that not without trembling, and who, in the deeper stages of intoxication "lies like a log," show the influence of alcohol upon the musculature.

Furthermore, the fatigue, relaxation and distaste for work which the laborer feels on Monday after the Sunday rest, even when his increased amount of drink has not resulted in drunkenness, shows this injurious influence, especially when one compares it with the beneficial effects of rest upon an abstainer. And yet one so often hears it said that alcohol renders endurance easy, that it facilitates recuperation in the hard working individual. But entirely aside from that, the fact that the use only after work of sufficient alcohol to produce euphoria [a sense of well-being] has a disadvantageous effect upon the work of the following day, chiefly by hastening fatigue, as Kraepelin and his pupils have shown, especially when it is taken daily for several days in quantities called "moderate," must make one reflect that it must be a peculiar kind of "recuperation" when alcohol still further incapacitates the fatigued muscle or poisons the wearied brain. How totally different for the former, in the way of good physiological strengthening, are the effects of refreshing rest, and for the latter a plentiful supply of fresh air which afterwards, in connection with an unstimulating diet brings refreshing sleep and true recuperation and invigoration. Alcohol at most can only deaden the unpleasant feeling

of fatigue and thereby render further physical exertion possible. No mortal can possibly do real mental work after taking a quantity of alcohol that produces euphoria. By this deadening of the feeling of fatigue a man delays giving his body the rest it needs and exerts himself beyond his strength, for even sitting in a tipling company is a strain on a tired man.

The feeling of weariness is the safety-valve of our organism which protects it from over-exertion. Whoever deadens this feeling is like an engineer who weighs down the safety valve of his steam engine in order to get more work out of it. A well built machine will stand it up to a certain point but it is not made better by such a trial, while every repetition reduces its power of resistance until it is no longer equal to even its normal working power and soon goes to pieces.

In the same way it is nonsense to resort to the so-called "use" for euphoria, for the bodily machine is not improved thereby but on the contrary made less efficient, a fact that is plainly taught but soon forgotten again by the condition after the euphoria has passed off.

The fact that after a day of hard exertion a man feels his fatigue less in the evening after taking his usual "moderate" though non-intoxicating quantity of alcohol should be set over against the fact that the next morning on arising he feels more fatigued than when he went to bed, and furthermore, tires more easily during his work than he would have done without the previous evening's drink.

Thus it is clear that by taking alcohol the organism loses instead of gains the strengthening effect which a healthy abstainer derives from not undue physical exertion when he has taken proper rest. The euphoria of the evening after work is purchased at too great a price.

German Alcoholic Mortality

THE Prussian Statistical Year Book for 1909 gives the number of persons who died of delirium tremens in 1908 as 1,157. Fifty-seven of these died between the ages of 15 and 30; 932 between 30 and 60; 131 between 60 and 70; and 34 were over 70.

The number of cases of alcoholic insanity in the insane asylums of the kingdom was 5,652, of whom 5,321 were men and 421 were women.

Alcoholism and Tuberculosis

THE Henry Phipps Institute in Philadelphia for the treatment of tuberculosis is compiling some valuable statistics on the relation between alcoholic habits and the response to treatment for tuberculosis. Beginning with the year 1907, the reports of the institution tabulate the course of the disease in seven classes of persons: (1) alcoholics, that is, "those who had used enough alcohol to do themselves some physical harm"; (2) those who had not; (3) those of whom there was no record; (4) those who had alcoholism in the preceding generation; (5) those having no alcoholism in the preceding generation; (6) those furnishing no record; (7) cases without alcoholism in either present or preceding generations.

The statistics for 1907 and 1908, the only ones so far accessible, show a marked difference between the alcoholic and the non-alcoholic classes. Of the former there were 293 cases; of the latter, 1145. In 1907, 50 per cent. of the non-alcoholics improved, but only 26.14 per cent. of the alcoholics; 22.87 per cent. of the alcoholics died, but only 7.83 per cent. of the non-alcoholics, showing, as the report says, "nearly twice as good results for the non-alcoholics as for the alcoholics."

The results of treatment in those who had a family history of alcoholism were only a little less striking: 47.20 per cent. of those with a family history of non-alcoholism improved as against 37.03 per cent. of those with a family history of alcoholism; 13.58 per cent. of the latter died, but only 9.48 per cent. of those who had no alcoholic family history.

The figures for 1908 give almost the same percentages: mortality 100 per cent. higher among alcoholics, 80 per cent. higher in those of alcoholic parentage; improvement 30 per cent. greater in non-alcoholics than in alcoholics, and 10 per cent. greater in those without than in those with alcoholic parents.

The number of those in whom the disease was arrested was very small in both classes. The total for the two years (1907 and 1908) was only 4 (1.61 per cent.) out of 247 who gave a history of alcoholism, and 15 out of 934 (1.60 per cent.) who gave a history of no alcoholism.

The same applies to the arrested cases in those whose family history was reported: 5 out of 266 (1.87 per cent.) had the disease arrested among those having alcoholism in the preceding generation, and 14 out of 899 (1.55 per cent.) where there was no alcoholism in the previous generation. These numbers,

especially among the alcoholic class, were rather too small to give significant percentages.

The Phipps's statistics throw little light so far upon the relation of alcoholism to the implantation or occurrence of consumption. The number of non-alcoholic patients treated in the institute outnumbered the alcoholic about 5 to 1. Probably there is not in the general population from which these patients were drawn 1 alcoholic of the degree taken as representative by the Phipps Institute to every 5 persons in the community not thus alcoholized, which would indicate that the alcoholic class of the population had a larger representation under treatment for tuberculosis than the non-alcoholic class. To determine this point absolutely would necessitate a count of the "alcoholics" in the community to determine their ratio to the non-alcoholic. A separate classification of total abstainers, all through, would afford additional light.

The Changing Standpoint from which Alcoholic Drinks are Regarded

THE announcement of a new quarterly review (*Die Alkoholfrage*) devoted to scientific and practical phases of the alcohol question notes in particular the following steps that have been taken in the solution of that problem.

"It is a striking fact that the alcohol problem has for a long time been denied due attention because of our custom of considering the use of alcoholic drinks as a mere private affair. How much or how little a person takes of these drinks, that—we thought—concerned only the individual. 'To know and control one's self is the task of the individual.' One took the problem for a private affair and overlooked, or at least, undervalued the full importance which the drinking custom of the individual must have for the persons around him and for his descendants. One hardly realized to its full extent the connection between such drinking and criminality, pauperism and other social miseries, nor did we feel strongly enough how far the whole efficiency of a people must be paralyzed by the custom of such drinking.

"In the course of the last few years a change for the better has set in. More and more people are coming to comprehend that alcoholism is to be looked upon not only as a disease of the individual, but of the nation, and that the struggle against alcoholism is one of the foremost social duties."

The Friendly Hand

When a man ain't got a cent an' he's feeling kind
o' blue,
An' the clouds hang dark an' heavy and won't let
the sunshine through,
It's a great thing, O my brethren, for a fellow just
to lay
His hand upon your shoulder in a friendly sort o'
way!

It makes a man feel curious; it makes the tear-drops
start,
An' you sort o' feel a flutter in the region of your
heart.

You can't look up and meet his eyes; you don't
know what to say,
When his hand is on your shoulder in a friendly sort
o' way.

Oh! the world's a curious compound, with its honey
an' its gall,
With its cares an' bitter crosses; but a good world,
after all.

An' a good God must have made it—that is what I
say
When a hand rests on my shoulder in a friendly sort
of way.—*Selected.*



The Working Man's Sources of Enjoyment

BY E. L. TRANSEAU

ALL men desire pleasure, enjoyment, happiness, and most men agree that these are proper desires. In fact, one "inalienable rights" mentioned in the Declaration of Independence is "the pursuit of happiness." But where men cease to agree is on the methods of securing happiness.

There can, of course, be no one method suitable for everybody for natures differ. But certain laws run uniformly through human life, and enjoyments that violate these laws bring penalty, sooner or later, in the form of pain or unhappiness.

Physical law requires that eight out of the twenty-four hours be given to sleep; the many who earn their daily bread have to spend usually from eight to ten, or even twelve hours in labor; meals and one's toilet take another three or four, so that only from one to four hours are left free for the choice of enjoyment. Not all of the enjoyment of life is by any means confined to these hours of leisure. Pleasure may be gained from work itself, even when uncongenial, through satisfaction in doing it well or quickly. The hours spent at meals may and should be hours of enjoyment.

But how to get the most pleasure with the least unpleasantness out of leisure time is each one's individual problem. Those who have learned before they have reached the time of life when leisure is scant to find enjoyment in good reading, music, or some form of art or handicraft are fortunate. For them new and widening sources of pleasure are ever opening.

"But," it is frequently urged, "the man engaged in very hard work is too tired when night comes for such enjoyments. He needs

lighter forms of entertainment." If his home is what it should be it will afford just the kind of relaxation and simple enjoyment he needs after his day of toil. If such home conditions are lacking, and in some cases where they are not, working men are in danger of forming the habit of going to the saloons to spend their evenings. In fact, the saloon has been called the working man's club because it affords him an opportunity for the enjoyment of social intercourse. But the danger from the use of alcohol far outweighs the benefit of the social side of the saloon.

Real working men's clubs, without alcoholic drinks, have proved a valuable source of enjoyment. Experience has shown that in the absence of alcohol higher and better methods of enjoyment are promoted. (A case in point is mentioned on p. 67.)

DELUSION OR NEGATIVE ENJOYMENT NOT REAL ENJOYMENT

Whether indulgence in alcoholic drinks really comes under the head of enjoyment is a question. One writer calls it negative enjoyment because the effect most sought for, especially by the tired working man, is the banishment of disagreeable feelings. It makes him forget his fatigue, care, hardship or whatever the trouble may be, and for a little while feel that his world is rosy instead of thorny. If it did only this and nothing worse it might do no especial harm for him to delude himself in this way for a while, but its tendency is to increase the cause of his troubles by making him less able to overcome them. The fatigue which he does not feel because his senses are dulled with alcohol is

still there and if not cured by proper rest it will take its toll from the next day's strength. The reason for his inability to find less exhausting employment is there and will not be remedied by deadening the feeling of dissatisfaction with alcohol. The inability to make a scanty wage cover family necessities will not be improved by spending a part of it in forgetting the suffering at home or the lack of sufficiently nourishing food.

A German writer has illustrated this method of escaping care by supposing that a man whose house is on fire should begin calling for help and the fire department should come and turn the hose, not on the fire, but on the man to stop his noise. The proceeding would be as sensible as stifling nature's cry for relief from weariness or discomfort in mind or body by deadening the call of warning and leaving the cause untouched.

TROUBLES DRIVEN AWAY BY ALCOHOL RETURN REENFORCED

Tried by the test of whether it makes one more or less fit for the next day's work the alcohol method is condemned at once. Common experience and precise laboratory tests prove that the amount of alcohol that would so effect the brain as to make a man forget his troubles would increase his liability to fresh troubles the next day.

In the ordinary occupations of life one is called upon to use a quick and accurate perception, discrimination, reasoning, judgment, memory. The amount of alcohol in one glass of beer (10 to 12 cubic centimeters) has been found to weaken these faculties temporarily and the amount in from three to six glasses (40 to 80 c. cm.) taken day after day for several days has been found to steadily lower perception, reasoning and other faculties, as shown by loss of ability to add and memorize figures, and to connect one's ideas.*

These are no unusual quantities for a man to take in the course of an evening, at least in company where the custom of treating prevails, and it is commonly thought that one who can take that amount without showing any effects of intoxication is not harmed by it.

ABSTAINERS FIRST AND FITTEST

Many experiences in every day life have confirmed the results of the exact experimental tests. Among others is that of the company of Scots and the company of Englishmen

engaged together in the same kind of work. The Englishmen jeered the Scots for drinking only milk and water with their meals, told them they needed ale to make them strong. The Scots declared they would prove themselves the stronger by doing more work the next day than the Englishmen could. The test was made and the Scots not only came out ahead with the work but they were fresh enough to sing and dance over their victory while the Englishmen were completely exhausted.

The Marathon races constitute one of the most exhausting forms of sport, calling for long continued endurance of severe physical exertion. And in those it has been proved that without alcohol men come out comparatively fresh, while with it they are either used up at the end or fall out by the way.

These facts are known to many, but not to everyone. Those therefore, who continue to use alcoholic liquors as a help to hard work or to banish discomfort after the day's work is done, either do not know these facts and need to be told, or they are reckless of their own best enjoyment.

Scientific Lecture Courses on Alcohol

FOLLOWING the example of the Berlin Central Society for combating Alcoholism, two other temperance societies, one in Dusseldorf and one in Colmar have inaugurated similar courses.* The latter was attended by about 400 teachers of Alsace-Lorraine who at the close of one of the sessions passed resolutions affirming that they held the occasional instruction of the young concerning the injuriousness of alcohol, thorough instruction in the seminary, and particularly the withholding of alcohol from the young until the conclusion of development, to be the most important aims of modern school instruction, and that they welcomed all efforts designed to strengthen the service of the teaching profession in the combat against alcoholism, and to influence the parents toward a non-alcoholic regimen in the training of their children.

This is in keeping with the recommendation of the Country Life Commission appointed by President Roosevelt which included among the "simplest and commonest laws of hygiene and sanitation" which ought to be "known in some useful degree to every boy and girl on leaving school", the physical evils of intemperance.

*Experiments of Wilhelm H. Specht, Leipzig Monograph (1907) and Prof. Emil Kraepelin and his pupils, published in Wundt's *Philosophische Studien* and Kraepelin's *Psychologische Arbeiten*, vols. II and III.

*Press Correspondence of the Deutschen Verein gegen den Misbrauch geistiger Getränke, Oct. 28, 1910.

Scientific Temperance Journal

Founded by Mary H. Hunt

Single Subscription.....\$0.50 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered as second class matter June 1, 1909, at the postoffice at Boston, Mass., under the Act of March 3, 1879.

Made in Germany

THREE-QUARTERS of a century ago, Carlyle remarked with sly humor that "the German can stand peaceful on the scientific watch-tower and tell the Universe, which so often forgets the fact, what o'clock it really is."

One is impressed anew with this trait in what Carlyle also called "learned indefatigable Germany" in bringing together reports of work of real scientific or social investigation of the alcohol question, of which so large a proportion is being done by the German-speaking people. While Germany has not until recently made as rapid progress as Great Britain and the United States in organized work against alcoholism, now that the movement is under way, it goes forward with the assurance of a well-laid scientific foundation. In scientific work on this subject as in so many others, Germany has made the world its debtor.

Industrial Assets and Liabilities

M R. EDISON is reported to have said recently that "society must cut out this drink business; that using drink in business is like putting sand into the bearings of an engine, and the social machine runs hard enough without having sand in its bearings."

The laborer of all classes—and this includes us all—in the experience of a growing number of practical men is putting upon himself a probable handicap if he indulges in drink. In some occupations, as pointed out elsewhere in our columns, this handicap is already recognized as so certain as to be prohibitive of employment.

Even a dozen years ago very many employers in the United States were taking some

account of the habits of their employees as to drink as shown in the diagram on the inside back cover of this JOURNAL. The number is unquestionably very much larger to-day. The reasons for abstinence whether sought in the field of economics or of health, as the *Journal of the American Medical Association* remarks, are already abundant.

Science is cautiously but surely defining the method and degree of physical and mental impairment by alcohol. The employer in his keen hunt for business leaks is discovering that the drinking employee is a definite source of loss; labor leaders are pointing out the fact that drink tends to anesthetize the ambition that is an impelling motive to the laborer, and to perpetuate the very conditions against which organized labor contends. The laborer himself is beginning to reach the conclusion that drink costs him dear in efficiency, earning capacity, and professional self-respect.

Thus, assailed from the four quarters of the business compass, industrial drinking finds its supposed assets vanishing and its liabilities increasing.

A Word with Editorial Brethren

FAR be it from the *Journal* to begrudge to Editorial scissors whatever in its columns may be of interest to readers of other periodicals. The honor of such reproduction is received gladly, and, it is hoped, with becoming modesty.

There are times, however, when editorial satisfaction at placing before the *Journal's* readers an original article or the material imported from other countries and translated at considerable expense of money and gray matter is somewhat dashed in finding such material reproduced verbatim in other publications as though it originated with them especially when, as not infrequently happens, a third editor copies from the second producer and in a desire to be honest gives the latter the credit as the source.

One article thus copied from the *Journal* recently went the rounds of seven or eight papers, each of which ascribed it to the paper which originally failed to give credit to the *Journal*.

The crediting of articles is of small consequence in itself, but it does serve to indicate to the reading public what a publication stands for.

By all means use the *Journal's* matter if useful to you, friends. All the *Journal* asks is that your forms be locked with the editorial Golden Rule.

London's Abstaining Mayor on Alcohol and Efficiency

THE Lord Mayor of London, Sir Vezey Strong, is not afraid to stand up and be counted on the side of abstinence and to give his reasons. He has on more than one occasion taken part in the meetings of the National Temperance League, once in particular at its Jubilee meeting in 1906, before he was mayor. At that meeting he gave his testimony to the fact that total abstinence is a most important aid to commercial prosperity as it is an aid to every agency for good that may be employed for the elevation of the race.

This matter of the relation of alcohol to commercial efficiency is one that has received attention from many of the foremost men of England. The *Daily Mail* reporting the remarkable meeting at the Mansion House, when the present Lord Mayor was Sheriff of London, said of it:

"A man casually entering the Egyptian Hall of the Mansion house yesterday afternoon might have fancied himself at a big company meeting. Well-known faces from the Stock Exchange, Lloyd's and Old Broad Street were in every room, insurance offices, gold mines and banks were represented in every corner; the President of the London Chamber of Commerce was on the platform with the Mayor, and City doctors near him. Yet the meeting was a temperance meeting, or rather a conference of business meeting, summoned to discuss the question of 'Alcohol in relation to Commercial Efficiency.'"

The matter is to receive further attention at an Imperial Conference which is to be held in London during coronation week. Arrangements are being made for the preparation of valuable memoirs from representatives from the English Colonies and India upon various aspects of the temperance problem as to the effect upon Imperial efficiency and status.

The Butcher and Baker getting their Share

SOME of the results of the remarkable "Catch-my-Pal" movement inaugurated in Ireland in 1909 by the Rev. Robert J. Patterson, LL.B., of Armagh are reported in the *National Temperance Quarterly*, Dec., 1910:

"Children are being better fed and clothed, and a higher standard of living prevails among the people. The butcher, baker, grocer, shoemaker and dry-goods merchant are all benefitting by the spending with them of

the large sums of money formerly wasted in drink. Butchers are selling meat instead of bones, and pawnshops are being closed up. In the city of Londonderry last winter, more children's boots were sold than ever before during the same period. The life of the policeman has become, in reality, a happy one, and cases are few and far between in towns where they were formerly numerous."

Failures in Home-Making

THE Associated Charities of Boston during 1910 made a special study of 352 families where the father was at home, able-bodied, but did not adequately support the wife and children. In seeking the apparent causes for failure to support the families, all but two of the sixteen conferences of the city gave intemperance as the chief cause. Of the 352 men reported, 243 were found to be more or less habitual drunkards. "From our brief review of the causes," says the report, "the burden of blame seems to rest on individual character and intemperance entangled together, rather than on environment, except as environment makes character."

**Massigkeitsblätter*, Oct., 1910.

An investigation made in the poor-houses and houses of correction in Strausberg* in the Province of Brandenburg furnishes additional evidence of the destructive influence of alcoholism upon family life. Of 384 in those institutions in 1907, 121 were married; 86 of these had lived apart from their families for years, and had contributed nothing toward the care or training of their children; 29 had been divorced, mostly for drunkenness and cruel treatment. In no single case had the marriage been broken through any fault of the wife. Only 6 still lived with their families. Nearly all of the 86 who had forsaken their families and the 29 who had been divorced were drinkers.

In harmony with the results of special investigations of the causes of broken or weakened family ties are the statistics of the Department of Commerce and Labor (1908) concerning the relation of drink to divorce in the United States. From 1887 to 1906 intemperance was either a direct or an indirect cause of 26.3 per cent., or more than one fourth, of the divorces granted to wives, and of 6.1 per cent. of divorces to husbands. It was present as a contributory cause in 32.4 per cent., or one-third of the cases in which the wife obtained a divorce on the ground of cruelty, and in 21.2 per cent., or one-fifth of the divorces granted to the wife for neglect to provide.

The Alcohol Burden of the Insurance Companies

MORE and more the conviction deepens that the insurance societies are heavily burdened by alcohol. Hence an article* by one of the keenest and most widely experienced of German insurance physicians, Dr. Hugo Deutsch of Brünn, on the work of the insurance societies in the struggle against alcohol, is of special interest. Dr. Deutsch furnishes much evidence to show that the anti-alcohol crusade is of special interest to the insurance societies and one from which they will derive nothing but advantage. He suggests four principal methods for promoting this work.

(1) Instructing the members as to the dangers in alcohol. For this purpose there is now an abundance of good literature.

(2) Encouraging members to exercise their own influence and that of their acquaintances among the working classes to diminish the use of alcohol after work as well as in the workshops.

(3) The co-operation of the physicians and officials of the insurance societies.

(4) Caring for sick members or those in danger by methods corresponding to the modern treatment of inebriety.

The condition of the working classes, Dr. Deutsch believes, will be improved hygienically, socially and mentally by the abolition of alcoholism.

*Press Correspondence of the Deutschen Verein gegen den Misbrauch geistiger Getränke, Oct., 1910.

Relation of Alcohol to Cancer

THE result of a statistical study of cancer published in a foreign journal is cited by the *Journal of the American Medical Association* (Jan. 7, 1911) as bringing out a new point in the causation of cancer. From an extensive study of the vital statistics of Bavaria by a special committee appointed for this purpose, it appears that cancer is distinctly most frequent among those whose trades render them most likely to indulge in alcoholic beverages. This, the *Journal* states, is in harmony with statistics gathered in other countries, which have shown cancer to be most frequent among those selling alcoholic liquors. "If" the *Journal* adds, "the relation between alcoholic habits and cancer is eventually shown to be one of cause and effect, temperance advocates will have an argument which will probably carry more weight with the average individual than any and all of

the excellent reasons for total abstinence which they can now command."

Statistics published by Westergaard in 1901 gave the ratio of cancer per 1,000 in inn-keepers, bar-tenders, general population and professional classes as 53, 65, 47 and 44 respectively.

Correspondence between Number of Accidents and Size of Drink Bill

A RECENT investigation* has confirmed a large amount of previous experience as to the casual connection between drink and accidents. Dr. Hugo Deutsch, by careful inquiry covering one year among 2,300 workmen of Brünn found that the number of accidents per 100 rose with the increase in the weekly amount spent for drink. The figures per week were:

Weekly expenditure for alcohol	Accidents per 100
\$.00 (abstainers)	10.3
\$.10 for alcoholic drinks	10.9
\$.10 to \$.20 for alcoholic drinks	11.2
\$.20 to \$.40 " " " "	11.9
\$.40 to \$.60 " " " "	12.1
Over \$.60 " " " "	20.6

Material was obtained also for counter proof. The abolition or marked diminution of alcoholic drinks in various large works has been followed by a marked decrease of industrial accidents.

(*Press Circular of the German Society of Abstaining Physicians, November, 1910).

Who is An Alcoholic?

DR. Seiffert,* Medical Advisor of the Board of Health in Benthien, Germany, has recently written a small brochure on the treatment of alcoholic patients among railroad men in which he gives the definition of an "alcoholic."

Those must be termed "alcoholics" who take alcoholic drinks either in small amounts habitually, or large amounts irregularly. The usual custom is to designate as an alcoholic only those who take large amounts of alcohol habitually. That is wrong because in those cases the question is almost exclusively one of alcoholic disease. But when the disease began it is difficult to tell. The transition of an alcoholic to an alcoholic patient is gradual, unconscious and unnoticed. Before everyone who uses alcohol regularly is not only the possibility but the probability of becoming an alcoholic patient. There is nothing to indicate definitely when he begins the amount that will be his limit. The susceptibility and resistance of the brain and other organs to alcohol varies with one's personality and constitution.

*Press Correspondence of the Deutschen Verein gegen den Misbrauch geistiger Getränke (Oct. 25, 1910).

Class=Room Helps

Conducted by Edith B. Mills

Alcohol and the Laborer

The writing of essays on the following and similar topics can but accomplish much good. More still might be accomplished if the children were better trained to see and emphasize only the more important points, quoting authoritative statements or incidents in connection therewith. Feeling also that teachers would find the outlines and classified data helpful not only in essay work but also in class work and reviews, we are glad to furnish these suggested outlines with reliable supplementary matter in other parts of the *Journal*, to buttress the points. Of course, it is not expected that all the topics will be used in any single case.

Effects Upon the Laborer Due to Personal Use

1. SUBTRACTS FROM "THE JOY OF LIVING."

a. By taking his surplus so that a short period of idleness or sickness reduces him to physical suffering and causes anxiety. Often he is obliged to accept charity.

b. By robbing him of many home comforts such as tasty, nourishing food, good clothing, comfortable, pleasant home.

c. By taking the money for the questionable sense pleasure (and for himself alone) which would furnish him or his entire family with books, periodicals, concerts, outings or unusual delicacies.

Drink in all its combinations adds to every trouble of life and but for it the problems of sickness and old age could be met more easily.—From Mass. Commission on Cost of Living.

"Dr. David Starr Jordan of Leland Stanford Jr. University says, 'The basis of intemperance is the effort to secure through drugs the feeling of happiness when happiness does not exist. Men destroy their nervous system for the tingling pleasures they feel as its structures are torn apart. The evil in drink is not primarily intoxication, but nerve disturbance.' Without doubt the greatest peril of alcohol is to the nervous system."—*Prohibition Press Circular*.

Everything that tends to plunge the workingman into misery is encouraged by alcohol; everything that is working to bring him out of his wretchedness is discouraged by alcohol.—Dr. Richard Froelich, Vienna.

2. SUBJECTS HIM TO UNNECESSARY HARD-SHIPS IN CONNECTION WITH HIS WORK.

a. By adding considerably to his fatigue. (See p. 70.)

b. By causing more suffering from exposure (1) to *heat* as in foundries, engine rooms, etc.; (2) to *cold* as in winter work not under shelter.

3. MAKES HIM MORE LIABLE TO ACCIDENTS DUE TO:

a. A certain mild form of epilepsy which causes dizziness or mental confusion.

b. Falls, shakiness, or miscalculations as

to distances among machinery, on railroads, etc.

c. Mental stupidity which allows drinkers to be injured who normally "would have their wits about them." (See data on p. 75.)

In Belgium it is calculated that 43 per cent. of accidents in mines and factories are due to alcohol. (*Alcohol and the Human Body*, p. 100.)

4. TENDS TO CAUSE POVERTY.

a. By lowering the income.

b. On account of enforced idleness due to preventable accidents or disease and sometimes to "groggy" condition after heavy drinking days.

c. By creating an imperious appetite which requires costly indulgence.

d. By inducing improvidence through allied wasteful habits.

e. By burdening the family with sickly children or those which are defective, as epileptics, imbeciles, etc.

f. By lowering resources and encouraging unthrift it deprives him of his capital and thus means to buy a home or little business.

P. M. Arthur, the late leader of the Locomotive Brotherhood, said: "If it were not for the saloons, do you know I think that seven-tenths of the workingmen would have their own homes instead of paying rent? Rum is at the bottom of the whole trouble."

John Mitchell, former president of the United Mine Workers, and the idol of Union Labor, says: "No man has a right to spend a cent upon himself until he has first provided for his family. The average workingman does not yet earn enough to give his family all the comforts they deserve. He has no money to spend on drink without robbing his family. I believe that as the labor movement grows, so will the temperance movement grow."

5. TENDS TO MAKE HIM A POOR INSURANCE RISK thus depriving him and his family of protection against sickness and death or else necessitating excessive premiums.

(The heavy drinker can scarcely secure insurance at any price.)

6. TENDS TO SHORTEN LIFE AND THUS THE PRODUCTIVE YEARS—BRINGS ON PRE-MATURE OLD AGE.

a. By producing conditions which encourage under-nutrition, insufficient clothing, and shelter, and general lack of attention to personal health.

b. By functional or organic diseases directly due to the poisonous effects of the drug; as dyspepsia, fatty heart, indurated liver, sclerotic arteries, epilepsy, etc.

c. By increasing susceptibility to trade diseases; as lead poisoning in painters, diver's paralysis, etc.

d. By lowering the body's resistance to germ diseases, as tuberculosis, etc.

7. TENDS TO LOWER EARNING CAPACITY BY IMPAIRING

a. *Physical efficiency.*

(1) Alcohol impairs the strength and precision of the muscles and, therefore, (x) reduces the output of piece work and (y) limits the field of highly-paid manual occupations.

(2) Impairs eyesight and hearing (and power of instant perception, judgment, and action) essential to work on railroads, etc.

b. *Mental efficiency.*

(1) Alcohol even in very moderate quantities impairs the quantity and quality of mental work such as reckoning, memorizing, and in a more marked degree, brain work of greater complexity. (See pp. 65, 73.)

(2) Alcohol injures higher brain centers thus (x) impairing power to attain a high degree of mental training, and (y) judgment and executive ability necessary to large undertakings.

(3) Tends to impair the ability to do creative work.

c. *Moral efficiency.*

(1) Alcohol undermines character, hence in banks and some other highly paid positions where rectitude and responsibility are necessary, drinkers are refused employment.

8. SERIOUSLY INTERFERES WITH HIS BETTERING HIMSELF.

a. Impairs personal initiative and saps ambition so that the drinker is often satisfied with meager attainment, poor environment, and low wages.

b. Impairs will power so that he lacks the resolution to carry out plans for his own betterment when they call for long and persistent effort.

Sir Hiram Maxim has said: "The English workman spends a great part of his earnings in beer, tobacco, and betting; has no ambition.... The American workman wishes to get on; he accomplishes a great deal more work in a day than any other workman in the world."

9. AFFECTS HIS CHILDREN UNFAVORABLY.

a. Children of drinkers are apt to lack suitable subsistence and, therefore, may not develop properly.

b. They may lack training of the right sort and may be so poorly environed that they become inefficient, vicious or criminal.

c. They are likely to be deprived of schooling, (1) on account of insufficient clothing, etc., and (2) because they must go to work early.

A careful investigation of an equal number of license and no-license cities, showed that in the license cities, 17 out of 100 children were being deprived of common school privileges and 47 out of 100 were losing high school training.

d. They are often of feeble vitality and may be defective mentally.

Effects on the Welfare of the Laborer Due to the General Use

1. INCREASES THE COST OF LIVING

a. By causing provision dealers to lose hundreds of dollars in bad debts on account of drinking which loss must be covered in part by putting a higher price on the goods.

b. By destroying food-grains.

Professor Patterson says that "two temperance people can be supported on the land needed to satisfy the coarser tastes of one regular frequenter of the saloon."—(Warner, p. 97.)

2. LAYS HEAVIER TAXES ON HIM

a. By lowering property valuations.

Prof. Barker (p. 17) states that the inevitable effect of establishing a saloon is to depreciate the property around it, and cites as example the city of Cambridge, Mass., population 100,000, in which under license from 1875 to 1885 the valuation of property decreased about \$3,000,000. Saloons were abolished in 1885 and during the next 20 years property increased in value \$36,000,000, the population doubled, and the savings-bank deposits trebled.

b. By decreasing aggregate wealth.

(1) The wealth producing power of labor is decreased; and (2) much of the money spent for drink is sent to distant breweries or distilleries instead of being spent in the locality.

c. By throwing a great burden of unproductive incompetents on the public charge.

(1) Pauperism; (2) insanity; (3) crime; and (4) defectives, epileptics.

The Report of the Massachusetts Bureau of the Statistics of Labor (1895) showed that of the paupers in state institutions 45 per cent. of the total number attributed their pauperism to the intemperance of themselves or others. Of insane in public institutions, of 897 cases where the facts could be determined there were 63 per cent. in which one or both parents were intemperate; and in 1506 cases there were 25 per cent. in which the intemperate habits of the person were considered the cause of insanity. (See Journal p. 17 for full

discussion.) "Of the 160,000 epileptics in America, 32,000 (20 per cent.) owe their affliction to the intemperance of parents."—Rosanoff in *McClure's*, March, 1909.) In the matter of crime the Bureau found that in the case of 84 per cent. of all convictions, the intemperate habits of the offender led to the condition which induced the crime. (See *Journal* p. 17 for fuller discussion.)

3. LOWER HIS WAGES BY FORCING HIM TO COMPETE WITH CHEAP LABOR, AS

a. Women and children who are driven into the field because deprived of support by the drinking habits of their natural supporters.

The saloon is the treadmill ever-moving, carrying the children into industrial life when they ought to be receiving an education or playing to develop their physical, mental and moral manhood and womanhood.—John B. Lennon, Treas. Am. Federation of Labor.

While we are trying to bar out cheap labor from abroad the saloon is steadily cheapening labor at home.—Warner.

b. Men's labor forced on the market unduly.

Mr. A. Crosby stated before the United States Senate Commission that the wages of mechanics are set by drinking men who, because of their improvidence, have no economic reserve, and, hence, are obliged to force their labor on the market, where it brings a low price, thus forcing down the wage average.

4. CUTS DOWN THE STANDARD OF LIVING AND THUS CAUSES UNDER-CONSUMPTION OF USEFUL COMMODITIES, the Manufacture of which Employs More Skilled Labor and Pays More Wages.

Professor Barker (*Saloon Problem* p. 10) states that the liquor industry pays a lower rate of wages than any industry with which it can be equitably compared. If the consumer pays \$100 for useful articles, he will give employment for more than 8 times as many days; he will pay nearly 5 times as much wages; and he will demand $4\frac{1}{2}$ times as much raw material as if \$100 were spent for alcoholic liquors.

"A wise man works and earns wages, and spends his wages so that he may work again."

5. OPERATES AGAINST LABOR IN ITS STRUGGLE FOR BETTER CONDITION

John Swinburn said: "The use of strong drink has always operated against labor in its conflicts against the unfair encroachments of capital."—

Prohibition Year Book.

Richard Trevellick said: "In my work of labor reform I am brought face to face with the liquor traffic. Its infamous power in politics foils all our efforts to secure good laws. I must get the saloons out of the path, so I enlist to overthrow the saloon, to secure the elevation and prosperity of labor."—*Prohibition Year Book*.

Why Business Men Demand Abstinence from Their Employees

Extent of Such Demand

As the result of an investigation authorized by Congress, Carroll D. Wright, Commissioner of Labor, in 1897, made extensive inquiries of employers as to their attitude toward drinking men. The replies which were received from about 7,000 establishments showed among other things:

a. That in hiring new men about 77 per cent. were accustomed to give consideration to habits as to the use of intoxicating liquors. (See back inside cover of *Journal*.)

b. That out of the 6792 establishments the following make some requirements that employees, or employees in certain occupations, shall not use intoxicating liquors:

Of agriculture about 54 per cent.; Manufactures, 48 per cent.; Mining and Quarrying 55 per cent.; Trade, 34 per cent.; and Transportation 80 per cent. More than 10 per cent. of all forbade drinking on or off duty.

c. More than half of the 3,621 establishments reporting on this point said that they used the discharge to lessen the trouble from intoxication among employees.

General Conditions Leading to Such Demand

THE EMPLOYER MAKES A NARROWER MARGIN OF PROFIT than formerly because most raw material has advanced in price; wages are higher on account of the increased cost of living; hours of labor have been much shortened; many states have liability acts which subject him to damages for injuries to workmen. In the case of common carriers, corporations are liable for damages for loss of property and injuries to persons due to the business. In order to meet the new conditions successfully employers everywhere are seeking on the one hand to eliminate all possible wastage and, on the other, to increase the output by installing more intricate and costly machinery and speeding it higher, and by demanding more and better work from the men employed.

Specific Reasons for Such Demand

1. ABSTAINERS ARE APT TO BE MORE PROMPT, RELIABLE, AND TRUSTWORTHY.

a. Drinkers are more likely to forget orders or the exact details of the same. (p. 65).

b. Drinking favors association with irresponsible, idle, or vicious companions and

often paves the way to gambling and defalcations. (Supt. Western Division of American Express Co.)

2. ABSTAINERS ARE APT TO BE BETTER NATURED AND MORE REASONABLE, thus avoiding friction and possibly serious conflicts.

"The alcoholic, whether a victim of large or small doses, is 'touchy' and 'explosive' when crossed in the smallest way. He is exacting petulant and hypochondriacal." (Cutten, quoting Mag-nan.)

3. ABSTAINER. ARE APT TO INCREASE THE AGGREGATE VALUE OF THE OUTPUT because of their unimpaired skill.

The difference between a \$4 and a \$5 shoe is very largely a matter of skilled labor. A drinking man can not do the finest work. It needs clear, alert, active brains. We may put the finest leather into a shoe, but if the fine hand of sober, expert labor is not there, it shows in the product and commands less in the market. (Prouty and Co., Shoe Manufacturers, Spencer, Mass.)

4. ABSTAINERS ARE APT TO WASTE LESS MATERIAL AND TO HAVE FEWER "KNOCK-DOWNS" (i. e., damaged products which have to be sold under price).

"He [the intemperate workman] is not an efficient factor in production. His 'knock-downs' eat up the possible profit on his good work." (David C. Mills, Editor, *Hat Review*, Nov., 1910.)

5. ABSTAINERS ARE LESS LIKELY TO CAUSE LOSS ON ACCOUNT OF WASTE OF TIME.

Employers lose heavily from the waste of time due to drinkers.

a. Drinkers are often absent from the works on account of (1) unfitness for work due to acute alcohol poisoning (drunkenness), as after pay-days; and (2) sickness due to lowered vitality and impaired resistance to disease.

b. The drinking workman often spreads disease among his fellow workmen for, not only is he more likely to contract germ diseases as colds, la grippe, tuberculosis, etc., but by his careless and unhygienic habits he spreads the germs in the factory. (New York *Hat Review*.)

6. ABSTAINERS ARE LESS APT TO BE RESPONSIBLE FOR PREVENTABLE ACCIDENTS. Drinking increases accidents.

a. *Involving*.

(1) The drinker himself; (2) his fellow-workmen; (3) and others as passengers on railroads, ships, etc.

b. *Caused by*

(1) Impairment of special senses as sight. (Kraepelin, Cutten) and hearing (Sprecht)

(Impaired vision may work damage in three ways—failure to see exact train orders; to read exact time on watch; to see signals correctly.)

(2) Impairment of perception—does not perceive the danger quickly enough.

(3) Impairment of reaction time—does not act quickly enough to avoid the danger.

(4) Impairment of judgment—fails to gauge distances between machines or nearness of cutting instruments, etc.

(5) Sometimes falls without apparent reason (caused by a mild form of epilepsy due to alcohol.)

c. *Results to employer.*

Damages for (1) loss of property, as cars, engines, or other machinery; (2) for injuries to workmen under employer's liability laws; (3) for injuries or loss of life due to business of common carriers, as railroads, etc.

7. ABSTAINING WORKMEN ARE APT TO BE MORE PROFITABLE.

Abstainers are likely to be (a) better clothed, housed, and fed; (b) to be more vigorous and have greater endurance; (c) to have greater application; (d) to be more self-respecting and ambitious; (e) to be in every respect, more efficient. (For full discussion of this topic see pp. 77-8.)

Professor Helenius was informed by Captain Pethrick, the manager of the copper mines of Knockmahon,.... "that more than 1,000 persons are daily employed, of whom 800 have taken the total abstinence pledge. Since doing so, the value of their productive industry has increased by nearly \$25,000 per annum; and not only are they able to put forth more exertion, but their work is done better and with less fatigue to themselves. Besides this they save at least \$36,000 every year which had previously been expended in the purchase of alcoholic liquors.—*The Alkoholfraße*.

LESSON SUGGESTIONS—The preceding lessons together with the material furnished elsewhere in this Journal, will supply an abundance of material useful for lesson schemes, for reviews, or to buttress teaching on various topics.

The quotations from various labor leaders will serve admirably for spelling or dictation. Some sections will furnish examples for the arithmetic classes; e. g., that one relating to the burden of incompetents. Let the children figure out the cost of the pauperism, etc., in their own state or city using the percentages given. Remind the children that those who do not drink are obliged to help pay these extra taxes. Use some of the topics for debate; e. g., Resolved, that the employer has no right to dictate what his workmen do outside of work-hours.

In advanced classes the topics may be placed on the blackboard and the pupils directed to get information from employers, newspapers and government reports, etc. Save the clippings and data thus obtained for further use. This method will serve the double purpose of linking the lessons or essays with everyday life and of causing most pupils to notice similar items in all later reading.

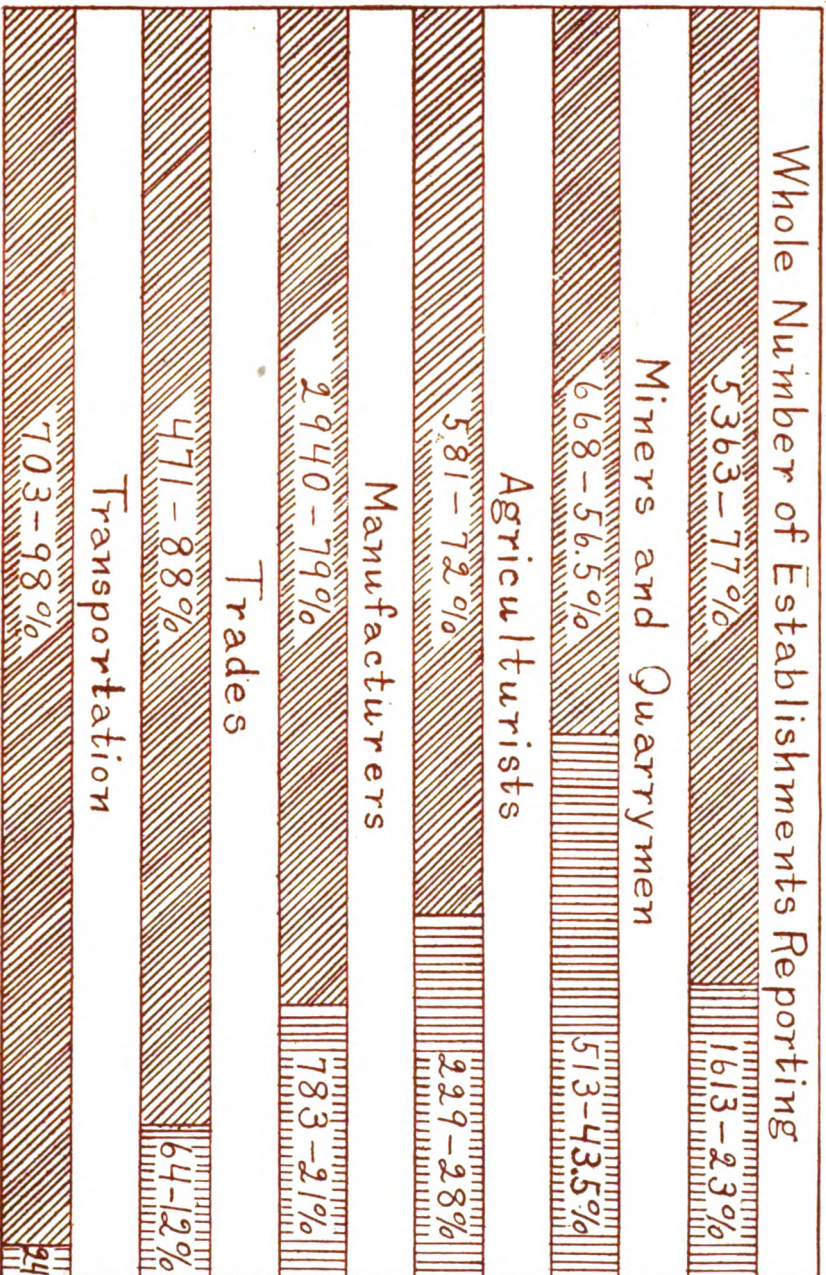
Use the charts given in this and the January Journal, leaving them in view where their lessons may be absorbed.

In younger classes use mainly the topic showing how and to what extent the use of alcohol tends to injure one's chances of success. A few other points may be touched lightly but definitely.

Employers Who Prefer Non - Alcoholic Workmen

From the Report by the U. S. DEPARTMENT OF LABOR of an investigation authorized by Congress, 1897.

*Diagonal lines represent employers who do consider an applicant's drinking habits.
Vertical lines represent employers who do not consider an applicant's drinking habits.*



Copyright 1910, by
Scientific Temperance
Federation, Boston.

The higher the grade of service required, the more rigid is the discrimination against drink.

"Cold-blooded business recognizes that a brain befuddled by intoxicants is less valuable than one that is kept clear."

The Gulick Hygiene Series

Educators agree that the first purpose of the study of physiology and hygiene should be in the lower grades, to influence children definitely towards intelligent habits of living. The child's own action, experience and observation should be made the object of constant appeal. This the Gulick Hygiene Series does. The originality of the design of these books and the scientific and effective treatment of the material is equaled in no other series of textbooks on hygiene and physiology. The series conforms to the requirements of every state law in the amount of study given to the subject of alcohol and other narcotics.

Arranged for school use and home reading in a

**Five-Book Course and a
Two-Book Course.**

GINN AND COMPANY

29 BEACON ST., - - BOSTON

SPECIAL OFFER

National Temperance Advocate

A TEMPERANCE PAPER FOR THE FAMILY. TEMPERANCE STORIES, POEMS, FIELD NOTES. MONTHLY NEWS AS TO WHAT GOOD TEMPLARS, ALL CHURCH TEMPERANCE SOCIETIES, ETC., ARE DOING. JUST WHAT YOU NEED.

Advocate, \$1.00 }
Journal, - .60 } BOTH \$1.25

A New Method!

Travelling Loan Exhibit

WHAT IS IT?

Exhibit consists of 25 Colored Charts (framed or not as desired, size 22x28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other Infectious Diseases, Longevity, etc. No objectionable details. Based on most reliable scientific experiments. Excellent for No-License Campaigns.

WHO USE IT?

General Expositions
Teachers' Institutes
Charitable Organizations
Christian Endeavor Conventions
Sunday School Associations
Temperance Lecturers and Conventions
Physicians, Ministers
200,000 persons have seen these charts in two years.
Send for Full Information as to Expense and Plan for Use.

SCIENTIFIC TEMPERANCE JOURNAL,

ALCOHOL in Every- Day Life!

ILLUSTRATED LECTURE

of scientific experiments, and a few attractive physiological plates. Most important phases covered. Nothing objectionable.

SPECIALLY DESIRABLE FOR

Labor Unions, Lyceums and Chatauquas, Societies of Christian Endeavor, Parental or Industrial Schools, No-License Campaigns, Public Temperance Meetings held in Churches or by Temperance Organizations, Social Welfare Workers and for High and Normal Schools and for Teachers' Meetings.

Subjects of Some of the Slides

Alcohol and Hard Work.
How Muscle Work is Measured.
Alcohol and Endurance.
Which Way Lies Success in Sport.
A Sixty-Mile Walking Match.
What Yale Football Men Say.
The Cost of a Mistake.
A Story for Bookkeepers.
Effect of Alcohol on Marksmanship.
Alcohol and Typesetting.
What the Shoe Manufacturer Knows.
A Healthy Nerve Cell.
What Alcohol Does to the Nerve Fibres.
Why Doesn't he Control Himself?
Where Accidents are Liable to Occur after Drinking.
Drink and Lead Poisoning.
Comparative Sickness of Abstainers and Non-Abstainers.
Drink and Impaired Vigor of Children, Etc.

Full information on request.

THE SCIENTIFIC TEMPERANCE FEDERATION,
23 Trull Street, Boston, Mass.

Bosworth Optical Company

Manufacturers of and Dealers in

**STEREOPTICONS, LENSES, GASES,
LIMES and SLIDES.**

Acetylene, Oxy-Hydrogen and Electric Apparatus. The "BOSWORTH DISSOLVER" has no equal in the market. Lectures Illustrated, Slides rented, Made to Order, Sold. Operators and lecture sets with lecture furnished, etc., etc.,

No. 36 Bromfield St., - Boston, Mass.

THE SUFFOLK ENGRAVING AND ELECTROTYPING CO.

ILLUSTRATORS ENGRAVERS
ELECTROTYPERS

394 Atlantic Avenue, - - Boston, Mass.

SCIENTIFIC TEMPERANCE JOURNAL, - - Digitized by Google 23 Trull Street, Boston, Mass.

SCIENTIFIC TEMPERANCE JOURNAL

— *Continuing the* —
SCHOOL PHYSIOLOGY JOURNAL

The Young Man and the Builders

By James Oppenheim

THE young man spoke to the President of the Board of Education. "What are you trying to do in the schools?" "We are equipping children with knowledge—teaching them how to earn their way in the world." But a young teacher added: "We are fashioning our children into souls of beauty. We change the world by changing the people in the world—we are creating a new race."

* * *

"Stone by stone, mankind is building a new Earth; a mansion of many chambers, wherein are warmth and comfort, toil and play, school and home, and every room has doors open into every other room. Soul by soul, it is building a new Humanity; it is making man after the pattern of strength, beauty and love. And in that mansion these mortals shall gather—the children shall fill its heights with laughter, the men set its walls resounding with excellent labor, the women touch it with the grave miracle of motherhood. Harmoniously they shall live and toil and play. And the name of that mansion where these mortals are to dwell? . . . No man yet knows."—*American.*

Published at—
BOSTON, MASS.

FEBRUARY, 1911

New Century Series

—OF—

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fulness and accuracy of the treatment in regard to the nature and effects of alcoholic drinks and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

The Scientific Temperance Federation

American Branch of the International Temperance Bureau

An Educational Temperance Organization

Purpose.—To make known in every possible way, in popular form, the proved facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

Methods.—The dissemination of facts by the following and other methods: **Personal Correspondence, An Editor's Press Circular, Loan Exhibit of Scientific Charts, Popular Leaflets, The Scientific Temperance Journal, A Stereopticon Lecture.**

Its Membership

Advantages.—All members are entitled to ask for special information on temperance topics and to receive free, notices of useful new publications, samples of leaflets or other information published by the Federation.

Associate Membership is open to all who desire (1) to have fuller acquaintance with the alcohol and narcotic question which membership in the Federation affords, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance. **Members' fees \$1.50 annually and all members may receive the SCIENTIFIC TEMPERANCE JOURNAL at the special price of 50 cents.**

All contributors of \$10.00 or more annually are known as **Sustaining Members**. The payment of \$100.00 or more constitutes one a **Life Member**.

The Scientific Temperance Federation has a unique place to fill; a distinct message and work. Its aims are fundamental and practical.

THE SCIENTIFIC TEMPERANCE FEDERATION.
23 Trull Street, Boston, Mass.

DRINK DAMAGES WORKING POWER of BODY, MIND, SOUL

Make this point practical, personal, convincing
Quarterly S. S. Temperance Lesson, March 19

LEAFLETS

"Teacher's Helps" Packages

\$.10 \$.15 \$.25

Alcohol and the Individual (Dr. H. S. Williams) \$.05
London Congress Report .10

"Distribution Packages"

400 leaflets \$1.00. Order as "Package No. 1" or "Package No. 2." Each contains simply stated practical facts about alcoholic drinks. Just what you want to create really intelligent temperance sentiment in your community.

Package No. 1, 50 leaflets each of 8 different kinds.

Package No. 2, 100 leaflets each of four different kinds.

BOOKS

The Saloon Problem

By Prof. John M. Barker, Ph. D.

Has chapters dealing with the economic, political, social and criminal aspects of the liquor problem; legislation, education, law enforcement and successful methods of work.

The Saloon Problem \$1.10 | ONLY
Scientific Temperance Journal60 | \$1.50

World Book of Temperance

By Dr. and Mrs. Wilbur F. Crafts.

Contains notes and illustrations for Sunday School lessons for six years. Scientific, economic, social and scriptural facts make it especially valuable for ministers and teachers.

World Book of Temperance \$.85 | ONLY
Scientific Temperance Journal50 | \$1.25

Alcohol and the Human Body

(Revised Edition)

By Sir Victor Horsley and Mary Sturge, M. D.

Most complete, reliable, interesting and valuable book on Alcohol and Human life, health, efficiency, morality and heredity yet published. 370 pp.; 16 beautiful plates; 21 diagrams.

Alcohol and the Human Body | ONLY
Scientific Temperance Journal60 | \$1.00

SCIENTIFIC TEMPERANCE JOURNAL, - 23 Trull Street, Boston, Mass.

Please mention the Scientific Temperance Journal when writing to advertisers.

Scientific Temperance Journal

Vol. XX

BOSTON, FEBRUARY, 1911

No. 6

The Power of Truth

IN our views and in our practice as a nation, there is something fundamentally wrong; and the remedy, like the evil, must be found in the correct application of general principles. It must be a universal and national remedy. What then is this universal, natural, and national remedy for intemperance? It is the banishment of strong drinks from the list of lawful articles of commerce, by a correct and efficient public sentiment, such as has turned slavery out of half our land, and will yet expel it from the world.

—John Wesley in 1773.



The Physiological Verdict*

BY PROF. W. A. OSBORNE, M. B., C. CH., D. SC.

AT THE present day, thanks largely to the fact that the medical profession, or at any rate many members of the medical profession, have seen their way to join the ranks of those who are fighting against alcohol, we find in the temperance literature, which is now so widely distributed, sane and modern thought and scientific advocacy of temperance efforts.

Most people who read a little nowadays are aware of the fact that the chief constituents of the human body—as of any animal body—are nitrogenous substances or proteins, fats, and mineral matters.

But quite within recent years a new class of body substance has been discovered, and has been elevated into first-rate importance. This new class is termed “lipoid”. Its importance is immense. It is quite as important in the body as the nitrogenous or albuminous material which is present in every living tissue. It is very like a fat in many respects, but in other respects it is divergent. It contains nitrogen, which fats do not. It contains phosphorus, which fats do not. Again, it mixes with water, which, as is well known, fats do not. It has certain remarkable properties, in that it can make certain bodies soluble which are otherwise not soluble.

If you ask me where is lipoid found in the human body, I might reply by asking where it is not found, for it is a native constituent of every living tissue in the body.

The whole of the animal body is compounded of units which have been termed “cells.” Now it has been found that the wall of every cell in the human body is largely compounded of lipoid. As a striking example

I may mention the red corpuscles of the blood, which act like so many little boats containing the red colored matter, and therefore enable the blood to carry gases from one part of the system to another.

The wall of the red corpuscles and of practically every living cell in the whole body is made chiefly of lipoid and it is found that there are strands of this material running through and through the substance of each cell. In fact, there is no region of any cell in any part of the body that is without this material.

Perhaps the largest accumulation of lipoid is that in the nervous system. There is far more lipoid in the brain than in any other tissue. If you examine a nerve, or what is called by physiologists a nerve trunk, you will find that this nerve is composed of many thousands of nerve fibers and that each nerve fiber which conveys messages into or out of the brain is invested with an insulating jacket of lipoid and thus the messages are prevented from spreading and from losing their effect.

It may be asked, “What has all this to do with alcohol and temperance?” The connection is a very important one, for only a few years ago two physiological investigators—one with the English name of Overton and the other with the distinctly German name of Hans Meyer—without collusion and without knowledge of each other’s work, made one of those discoveries which at once clears up a whole host of problems. They discovered the principle that any substance which dissolves lipoid, or, what is the same thing, is dissolved in lipoid, is an anaesthetic. Chloroform, ether, and all those agents which are used in modern surgery to produce unconsciousness are dissolvers of lipoid, or are themselves soluble in lipoid, for from the chemical standpoint the two are the same.

*Abridged from a lecture delivered in Melbourne under the auspices of the Victorian Branch of the British Medical Temperance Association. Reprinted from the *Alliance Record* (Melbourne).

Then the generalization was extended. Besides acting as anaesthetics, such substances also act as poisons to every living cell in the body. Not only does chloroform lull the consciousness to sleep but it depresses every organ of the body as well. The brain, owing to its high percentage of lipoid, is more sensitive to the action of chloroform than other organs of the body and therefore the first and most obvious paralysis is the paralysis of consciousness.

Now we come to the next point. When chemists and physiologists found that alcohol is soluble in lipoid, it was to them sufficient warrant for ranking it as a narcotic poison, and hence it is now so classed without any apology whatever. This statement is altogether irrespective of the effects it will produce in an animal.

What will those effects be? We find that any substance that interferes with the lipoid of the body interferes with the activity of the tissues. Lipoid has many functions to perform. Among others, it acts as a binding wall enclosing the cell contents and preventing them from escaping. Take, for example, the case of the red corpuscles. The red material is held in the corpuscles by a coating of lipoid. Shake up a little alcohol with some blood and the corpuscles simply vanish. Naturally no one would imbibe alcohol to that extent or death would ensue very quickly.

Again, we find that if the lipoid which runs through and through every cell is interfered with, the whole mechanism of the cell is impaired. Lipoid is an essential ingredient. It is one of the essential structures present in each cell of the body, and when alcohol or chloroform or any of those substances comes in contact with it, it alters it physically and chemically—it is no longer the same thing.

Lipoid subjected to alcohol has no longer the same physical properties and that is why all these substances have poisonous effects on every tissue of the body. And just as we class chloroform and ether and these other bodies as narcotic poisons, as general poisons but having a primary narcotic action, so we must rank alcohol with them.

It is unnecessary for me to go into the very elaborate tests that have been made in recent years in connection with the action of alcohol on the different organs of the body. But if there is one thing which the imbibor of alcohol believes, it is that it is a stimulant, and that under the action of alcohol he has greater muscular powers and also greater mental powers. This is a thing not to take anyone's word for—we never take anyone's word in scientific work.

The investigations of the greatest of the world's physiologists, and I may mention German scientists specially, now unanimously agree that the use of alcohol to give muscular strength is completely irrational. Not only muscle, but every gland in the body is in the same category. We are now standing on the firm basis of our lipoid chemistry, and can speak more broadly on the subject. Take the nervous system. You are aware that the nerve system ramifies throughout the body, bringing messages from the organs into the brain, the brain being looked upon as a sort of central exchange, receiving messages and switching them on to the nerves that go out of the brain. It is a mistake to think that the brain creates messages. All it does is to switch incoming messages into outgoing channels. There is a continuous incoming of messages, and these messages are classed together in the brain. We find that practically every organ of the body is under discipline through the nervous system.

We have to regard alcohol as a paralytic or narcotic agent entirely,—and if you investigate the reasons why people take it, you will find invariably that it is really for the paralytic, rather than for the stimulant action.

The feeling of fatigue which we all experience is a very healthy symptom. It is a little message from nature saying that we are overdoing. If alcohol is taken you cut off and stop that nerve message.

The engineer on board a steamer who tells you that his boilers are magnificent boilers because they never give too high or too low a pressure, but who, you find upon investigation has tampered with the pressure gauges so that they do not show the correct steam pressure occupies the same position as a man who explains his feelings under alcohol.

If that perfectly legitimate normal feeling of tiredness which is a sure sign to stop some particular form of work—mental or physical—be wholly removed, a very important regulatory mechanism of the body is cut away. And it is just because a person, when that feeling of tiredness is cut away and the nerve messages no longer reach him, feels that he has been truly stimulated, that he resorts to activities to which normally he would not resort. It is really the paralysis of a certain variety of nerve impulses.

I would like you to think of the body when alcohol is circulating in it as being interfered with in a way illustrated by that French expression, which is on the penny-in-the-slot weighing machines—"Please don't brutalize the machine."

The March of Progress

BY PROF. R. HERCOT, LAUSANNE,
SWITZERLAND

THE brilliant success of the referendum upon Prohibition organized by the SWEDISH Abstinent societies has excited the admiration of the anti-alcoholic world. In a population of 3,400,000 inhabitants over eighteen years of age, 1,900,000 voted in favor of total prohibition, a small minority against it. The abstainers in Sweden number 500,000, nearly a tenth of the population. The Swedes are wise not to abandon the work of education in the midst of their agitation for legislative measures. They have in particular organized courses of anti-alcohol instruction which far surpass any on the continent. When it is added that fifty of these courses have already been given, attended by hundreds and even thousands of auditors one can estimate the extent of the Swedish movement.

NORWAY

NORWAY is preparing for legislative reforms that will approach the goal toward which the anti-alcoholists have been working, total prohibition. A commission of inquiry—partly parliamentary, partly governmental—has begun its work. Abstainers are represented on it by several of their most capable leaders. The direction of the cause of prohibition will be in good hands.

The last municipal election showed the strength of the abstainers in several towns. The capital alone presenting an unpromising field.

ITALY

IN ITALY Professor Zerboglis has presented in the Chamber of Deputies a proposition, very well received, upon the necessity of undertaking the fight against alcoholism. A ministerial sub-commission organized by the attorney general, Calabrese, has presented radical measures for preserving children from the contaminating effects of alcohol. The president of the council, Minister of the Interior M. Luzatti, had an inquiry concerning alcoholism made by the chiefs of police. The National Congress against Alcohol held in Milan, Oct. 30 and 31, was a veritable success. It augured well for the future of the movement to see the chiefs of the socialistic party—convinced abstainers, take an active part.

GERMANY

Germans are called slow. Perhaps! but once they perceive an ideal to be right, they strive to realize it with a tenacity of which Latins are jealous. The anti-alcohol movement is now solidly established in Germany. It has enthusiastic adherents and knows how

to secure the favor of the authorities. The Society Against the Abuse of Spirituous Liquors with a large and active Bureau in Berlin is not alone in gathering laurels. The abstainers are reaping their share. Emperor William recommends abstinence to the naval cadets. The first burgomaster of Ausbourg in Bavaria assisted at the Congress of Abstainers. Four hundred thousand signatures were obtained to the petition in favor of local option to be presented to the Reichstag. A special Journal on this phase of the question has been started. The German women have rallied to the reform.

FRANCE

IN THE French Chamber of Deputies, M. Joseph Reinach has taken up a project of limiting license and has secured a report that is a veritable encyclopaedia on the question of alcoholism in France.

M. Prof. Aubert has laid before the Minister of Education the answers to some 65,000 circulars of inquiry and from them has made an interesting report which throws light upon the profound ravages that alcoholism is making in France and the various remedies direct and indirect that are being opposed or that should be opposed to the evil—*Translated for SCIENTIFIC TEMPERANCE JOURNAL.*

Temperance Education in Canada

AMONG the resolutions adopted at the big annual convention of the Ontario Branch of the Dominion Alliance, held at Toronto, Feb. 14-16, looking toward the further curtailment of the liquor traffic and the increase of public intelligence was the following passed by a unanimous vote:

"Whereas it is of permanent importance that the youth of the nation be thoroughly educated to intelligent sobriety, forewarned with knowledge of the nature and effects of alcoholic beverages; therefore, be it resolved:

"That we respectfully urge the Department of Education to give this subject, as a part of physiology and hygiene, a definite time and place among the subjects required for promotion of all pupils in all public schools of this Province."

Alcoholism and Pneumonia

PROF. G. MILTON LINTHICUM, M. D., Baltimore Medical College, in his presidential address to Medical and Chirurgical Faculty of the State of Maryland, said that the predisposing causes of pneumonia (which causes 11 per cent. of all deaths in the United States) have been observed to be those things which lower the vital resistance, such as alcoholism, acute or chronic, exhaustion, exposure, and insufficient clothing or food.—*Jour. of American Medical Association* (June 4, 1910).

The New Knighthood**

NOT even yet, my friends, do all the people fully realize the immense importance of health, of mental and physical efficiency. It must be repeated again and again—No public welfare without public health. The richness of material and mental possessions, the best means of good breeding, and the greatest freedom of the citizen are all of no value if the people concerned are not physically sound and mentally efficient.

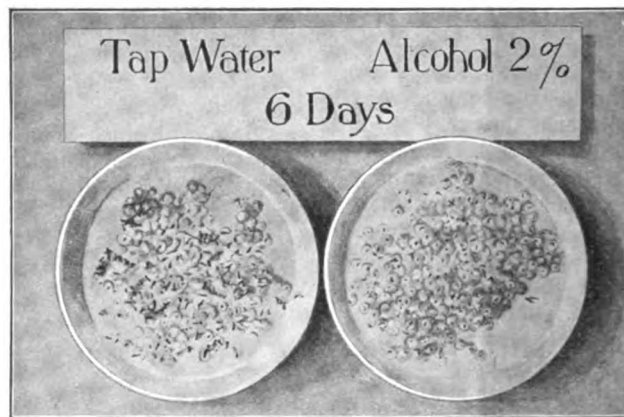
The ideal aim of all culture is a society of men who are independent in observation, independent in reasoning, mentally free, and voluntarily devoted to the service of all.

Men are, of course, not born with mental and moral personality. There is born only the material out of which this must be formed by the art of training. But the highest train-

ment of the germ plasm. If men far past the prime of life marry very young women, as frequently happens in the higher classes of society, two injurious factors come together and furnish us a sufficient explanation of the sudden degeneracy of a generation.

Very long continued inbreeding, also, is, as we know from stock-raising, exhausting to fertility, while moderate and not too long inbreeding with sound and virile strains appears to have very favorable effects even in men. All races that achieve greatness appear to have had an origin of this kind.

Every serious weakening of the parental body may weaken the vitality of the germ plasm. Such are the effects of continuous insufficient diet, physical strain through long-continued muscle work, the bearing of too



FROG'S EGGS AFTER SIX DAYS*

More Tadpoles hatched in water containing no alcohol.

ing is impossible with sick men, with inefficient and unsound brains. Not until it has become entirely clear to us that the whole intellectual and moral personality have their objective point in the brain and the character of its operations, only then have we fully grasped the fact that the destiny of a people depends upon to what degree they beget sound children and train them to healthy manhood. . . . Well built and rightly acting brains are therefore first of all necessary if the human being is to succeed.

Rudimentary as our present knowledge of this subject [Eugenics] unfortunately is, we already know a few things which cause injury to the germ plasm during the period of growth. We know that extreme youth as well as advanced age of the parents are unfavorable for the nourishment and develop-

ment of the germ plasm. If men far past the prime of life marry very young women, as frequently happens in the higher classes of society, two injurious factors come together and furnish us a sufficient explanation of the sudden degeneracy of a generation.

Very long continued inbreeding, also, is, as we know from stock-raising, exhausting to fertility, while moderate and not too long inbreeding with sound and virile strains appears to have very favorable effects even in men. All races that achieve greatness appear to have had an origin of this kind. Every serious weakening of the parental body may weaken the vitality of the germ plasm. Such are the effects of continuous insufficient diet, physical strain through long-continued muscle work, the bearing of too many children, or births coming too near together; also sexual excesses. . . .

Mental overwork is often looked upon as particularly injurious to the generative functions and there are many authors who attribute to that cause the dying out of the higher classes. I feel, however, the absence of actual proof that intensive mental work is really the cause of the trouble; and opposed to that theory I find, especially, the example of the Jews who have not lost their fertility although for many hundred years they have engaged in intensive and exacting mental and mercantile activity.

Chronic illness may be very harmful to the germ plasm and the after effects may continue for a long time. Particularly dangerous to the descendants are those infectious diseases

**Extracts from a lecture given April 25th, 1908, under the auspices of the Central Association for Combating Alcoholism, Berlin.

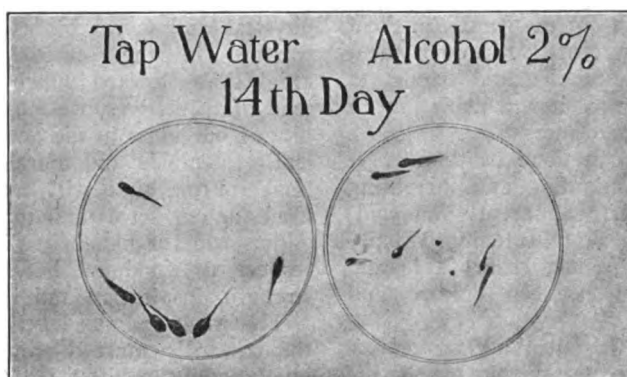
*Experiments made by Dr. Adam Eccles of England. (See page 96.) Illustrations from *Emergencies*, Gubick Hygiene Series, courtesy of Glen & Co., Boston.

which may strike directly at the embryo, as is the case with syphilis.

Most destructive to the germinal material are certain poisons which may be carried to them by the fluids of the parents. We know a whole series of such germ poisons, such as lead and quicksilver. Their drastic effect upon the unborn is proved by the large number of abortions and deaths due to lack of vital energy; the weakness, sickness and misery among the progeny of those who work in these poisons is evidence thereof. This fact has led to legislation forbidding women to work in lead and quicksilver.

mortality from alcohol. The early death means a long preceding time of diminished efficiency and of invalidism, a premature impairment of physical and mental power and industrial ability of the bread-winners, of the husbands and fathers. Injuring the economical conditions leads to neglect in the training of the children.

So far as heavy intoxication is concerned, times have improved. Not many centuries ago it was customary in Germany, even in the best society, for men and women to drink at mealtime until they fell under the table. That kind of alcoholism, it is fair to assume,

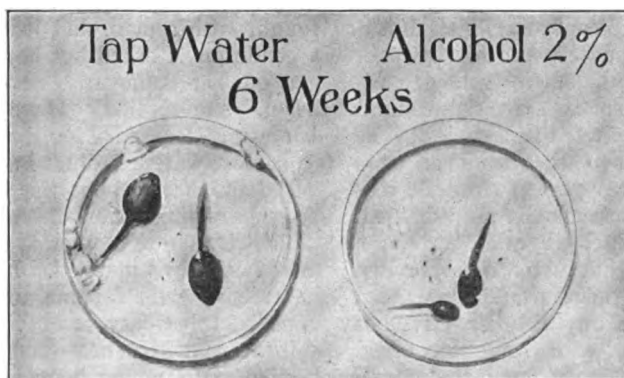


TADPOLES FOURTEEN DAYS OLD*

Tadpoles grew better in water free from alcohol.

[The writer here discusses the relation of alcohol to degeneracy and longevity, quoting facts well known to our readers, and continues:]

has happily ceased; but I am very doubtful which is hygienically and morally the worse, such immoderate drinking or the present customary chronic stupefying with alcohol, this



TADPOLES SIX WEEKS OLD*

Same story; Tadpoles still grow better in clear water.

Can we doubt that an injury to the body of a parent which shortens his life from five to ten years has an effect on the germ plasm?

But apart from the immediate injury to reproduction, what an immense amount of avoidable pain and misery and loss of life and property is involved in the increase of

steady source of relaxation and inertia and aimlessness, of will-weakening and despondency, and of craving for pleasure without exertion. There is no doubt in my mind that the increasing tendency to divorce and desertion of children is in large measure but a symptom of this alcoholic depravity and I

hold this moral deterioration to be worse than all the other evils that alcohol causes.

And in addition to all this, let us consider that our people spend annually about 3000 million marks, the working classes at least 10 per cent. of their total income, for alcoholic drinks, and thereby deprive themselves of many necessary things—proper food, good housing, faithful care of children, recreation in the open air.

Are not all of these considerations powerful enough to rouse us? Shall habit, fashion, effeminacy and self-delusion continue to be the stronger and hold us to the present customs?

I must say that I hope for nothing better from our old people. But the young, in them I put my trust. There are yet among them enough who are high-minded and strong, to whom one needs only to show a noble aim in order to arouse all their energy.

What nobler aim can there be than eugenics? It means maintaining and increasing the best. The hitherto apparently unavoidable tragic connection: intellectual productivity, physical sterility, must cease; a lasting bond must be found between culture and health.

The fight against the drinking customs is only a part of the great task, but one of the most important.

Our confused, unbridled, and aimless

times need a new ideal. Here it is! A band of youth! A new spirit is necessary! Alfred Plotz has expressed this very beautifully. He says: "We need a new spirit of knighthood in its highest and purest form. We must look upon ourselves as knights of life, knights of sound, vigorous and beautiful life, out of which all earthly happiness comes and from the striving for which alone, if general, we may hope to have in the future what men left behind them in the golden age.

"The inspiration of higher knighthood devotes itself at all times to the service of humanity, to the love of mankind, to the protection of the weak and to the promotion of physical and moral beauty, activity and the warfare in the service of ideals. This knightliness toward which all noble natures tend of themselves, we must place at the service of our ideal in the generating of a physically, mentally and morally perfected mankind. From that will come the ideals we need for our selves and for our descendants; enthusiasm for human perfection not only in respect to goodness, but, also, health and strength, inspiration and inspired deeds."

The weak and the lazy, the effeminate and the cowardly must die out, voluntarily and involuntarily.

The world for the vigorous, the efficient and the good!—*Translated for the JOURNAL.*

The Conversion of Vania

A SIDELIGHT ON THE RUSSIAN NATIONAL LIQUOR MONOPOLY

THE day after a church festival is always the feast of St. Lombard. Outside all the pawnbrokers' establishments in Moscow, one sees crowds of poor people drawn up in line, men, women, children, but mostly women. It is a pitiable sight. Each person is carrying the article to be pledged, and whether it is a samovar or a chair or a petticoat or a pair of trousers, it is never wrapped up. Russians are not ashamed. The long queue which I saw near the Tverskaya street, the day after a pilgrimage to the Shrine of Sergievo, would have been thought a disgrace to any English city, but the Russians looked on with equanimity. And to walk from end to end, from the pawnbroker's door to the last person who had just hurried up with a pledge, was like reading a chapter from the darkest pages of Gorky.

One poor woman seemed to me weighed down with responsibility. She had a copper samovar under her arm, and I asked her what misfortune had overtaken her. It was the old story—her husband was a cabman, he ought to have taken no holiday the day before, the streets were full of people, and he might have

had many fares; but he had gone to a tavern in the morning, and spent all his money and fought with a man, and had been arrested by a gendarme. I asked her how much she would get on her samovar. "Seventy-five copecks, barin," she replied, "Have you got another samovar?" I asked, "No, barin, we shall have to borrow water; I don't know what the table will look like without the samovar; it won't be home without it; it has always been on the table; it was my mother's; and she gave it to me when I was married. I am sure we shall never have good fortune after the samovar is gone." I lent her seventy-five copecks—one shilling and sixpence—and told her to take her beloved samovar home again. She accepted without hesitation. She put the samovar down on the pavement, and embraced me with both arms. "Bless you, barin, the Lord bless you; come along and have some tea."

I went to her poor little home, two rooms, in which there was no furniture beyond the bed, a table, some boxes and the ikons. Two pallid, starved daughters, girls of thirteen and sixteen, smiled sweetly, and made themselves happy over our party. I had bought some

barankas—dry Russian biscuits—*en route*.

The woman told me the story of how her husband had nearly been cured of drunkenness by God. A year or two ago a most holy priest at Sergievo had been empowered by God to cure drunkenness. Thousands and thousands, tens of thousands of drunkards, had made pilgrimages from Moscow and Kiev and Odessa, and the country had been cured by the priest by miracle, and Vania had gone from Moscow, and had been a whole month sober because of the prayer of the holy man. Then suddenly the holy man was removed and Vania got drunk again.

It was like this. Vania went on foot to Sergievo and saw the monk. First he was anointed, and then received Communion, and then he went to the priest's house, where he had to tell his story to the holy man. Then they prayed before the ikon that God would have mercy upon Vania. After the prayer the priest rose and said: "God knows now that you want to become sober and lead a new life. You must remember that He is looking at you particularly, just as He would a new plant that was beginning to bud. Today He sees you all white and beautiful, and He says to the angels, 'Look at My servant Vania, how well he is living.' Each morning and evening God will say how much brighter and more beautiful he is becoming."

"Glory be to God!" replied Vania.

"Now," said the priest, "for how many days can you keep sober? For how many days can you live without touching a drop of beer or vodka?"

"For ever, a thousand days," replied Vania.

"A thousand days is only three years; it is not for ever," said the priest.

Vania blinked his eyes.

"You must kneel on your knees and swear to God that you will not drink," said the priest. "But if you break the vow, it will be very dreadful."

"Yes," said Vania; "I shall swear it."

"You are very weak," said the priest; "you must pray God each morning when you get up, and each night before you go to bed, that He may give you strength. Perhaps you will fail, perhaps you are lost; but God is going to give you a chance. He's going to watch you for one week first, for one little week. You must swear to God that you will not drink vodka or beer for one week."

Vania on his knees repeated the oath.

"Rise now, Vania," said the priest: "I think you will keep this little oath; but if you feel you can't you must come straight to me, and I will release you. You mustn't break it. I can let you off quite easily if you come to me. But if you break it, God may strike you dead,

or He may give you to the devil. The devil would be very glad to have you, Vania, but it would be very bad for you. Today is Sunday; I shan't be angry if you come to me tomorrow or on Tuesday and say: 'Release me, father.' I will then release you, and pray God to have mercy on you, and to send angels to help you."

Vania went away, and kept his vow on Monday, Tuesday, Wednesday, Thursday; but on Friday, a very cold day, he wanted a drink very badly. Comrades laughed at him, too. He drove up and down the city, and got only one little fare the whole morning. There were fifteen copecks in his pocket. He might get two glasses for that. Every tavern tempted, and the devil seemed waiting at every tavern door. At two o'clock he drove home quickly, and gave the fifteen copecks to his wife; at half past two he rushed home again and begged the fifteen copecks back. He got them, and went straight to a vodka shop to buy a little bottle. He entered the shop, placed his little bottle on the counter, and asked for vodka. The woman behind the railing of the "monopoly" counter stepped back to pick out what he wanted, and at that moment, Vania, all of a tremble, looked up and saw the holy ikon—a figure of Christ—in the shop, staring at him. The woman, when she brought the bottle, thought the customer had a fit, for he suddenly shivered and bolted from the shop.

"O Lord, have mercy!"

Vania went home and prayed, and successfully resisted temptation for ten days, and very proud he was at the end of that time that he could so return to the holy man. The latter praised him and hung a sign of God by a little chain round his neck.

The priest prayed with him again, and sent him away for a fortnight on the same conditions.

Vania was sober in this way for a whole month, and all his family with him, and he prospered with his cab and bought their furniture out of pawn. God was evidently very pleased with Vania.

But at the end of that time a catastrophe happened. Vania went to the shrine to be reconfirmed in his new life, and behold! the priest was not there any more. He had been removed by the bishop, and no one knew where he had gone. There was weeping and gnashing of teeth and unutterable sadness and despair among the crowds of drunkards.

The Government, hearing of the success of the priest, and noting the diminution in the sale of vodka, had suppressed the holy man, in order that there might be no shortage in the treasury. There was the interest on foreign loans to pay.—*The Vanguard*.

Self-Drugging

THERE is an old saying that "At forty a man is either a fool or a physician."

Such a statement will not hold good in these days of specialism. . . . [We now understand that] self-dosing is expensive and dangerous. The man who doses himself with patent nostrums, who seeks every possible avenue of relief before consulting a trained physician, pays the highest price for the poorest service. He puts his hand into a sort of medical grab-bag, and if he draws only a harmless or useless nostrum he is lucky. Quite frequently he draws a narcotic poison, besides losing valuable time, when proper medical treatment could do much to check commencing disease.

DANGERS AND FALLACIES ATTENDING THE USE OF NOSTRUMS

1. Ignorance of the patient regarding the real nature of his malady. Even a physician cannot properly treat himself for a serious ailment; his judgment is impaired when considering his own trouble.

2. Absurdity and mendacity of the claims by nostrum vendors. The promise of "cure" in conditions for which the most eminent scientists throughout the world have been unable to find a cure. There are many diseases which yield to intelligent medical treatment and supervision, but are not curable by any single drug or combinations of drugs.

3. The promise that a single remedy will cure a multitude of ills of diverse character requiring diverse methods of treatment.

4. The presence of large percentages of alcohol in many nostrums, rendering them injurious in most forms of disease, and likely to promote the formation of the alcohol habit.

5. The presence in such remedies of narcotics or dangerous drugs—opium, cocaine, acetanilid, phenacetin, caffeine, etc., the use of which in unskilled hands is not only immediately dangerous, but encourages the formation of drug habits.

NEED OF FURTHER SAFEGUARDS

The Food and Drug Act is being vigorously enforced to protect the public from some of the above mentioned dangers, but our laws both State and Federal, are still inadequate in their scope, and inconsistent in their terms.

The sale of cocaine, opium and other poisons in ordinary powder, pill or solution is prohibited except upon a physician's prescription, and it is not lawful to refill such prescriptions. But "Asthma Cures," "Catarrh Cures," "Consumption Cures," "Tobacco Cures," "soothing syrups," headache powders,

soda-fountain "pick-me-ups" with fancy names, and many nostrums containing opium, cocaine, and other habit-forming or poisonous drugs, may be freely purchased and have quite as much power to injure the purchaser as in the form prohibited by law.

As State and Federal laws now compel manufacturers to so label their products as to indicate the presence of narcotic drugs the public can no longer plead ignorance as to these dangerous preparations.

Do not use any remedy that contains opium, cocaine, chloral, acetanilid, phenacetin, caffeine or even alcohol, without consulting a physician. Do not take the advice of the man on the street regarding your health even if he does know on which side of the body his liver is located, which is highly improbable.

Treat that delicate mechanism, your body, as respectfully as you would your watch. Keep it "in tune" as you do your piano.

NARCOTIC DRUG HABITS

It has been estimated that from two to four per cent. of the population in this country are addicted to some drug habit. The amount of opium (exclusive of smoking opium) consumed in the United States per capita has been doubled within the past forty years. Cocaine, which has only been in use about twenty-five years, is now consumed to the amount of 150,000 oz. per annum.

Surely drug addiction is quite as serious a problem as the hook-worm disease or typhoid fever. . . .

An unstable or defective nervous organization, whether inherited or acquired, offers the least resistance to narcotic slavery. Nerve centres enfeebled by overwork, or poisoned by the toxins of disease eagerly welcome opium or cocaine as a "prop".

Drug habits are not always established by the use of patent medicines. In the past it has been a common custom to have prescriptions for anodynes or narcotics that were necessary in some painful condition repeatedly refilled. Such prescriptions would often be handed over to friends with the best of intentions but with lamentable results. . . .

The attempt to escape trivial physical pain or the ordinary worries of existence by the use of narcotics is an attempt to cheat in "playing the game".

The habitual use of narcotics is comparable to borrowing money at usurious interest rates. The longer the practice is continued the heavier becomes the burden of debt to nature until finally physical bankruptcy ensues.

THE DRUG HABITUE VS. THE STEADY DRINKER

Since alcohol is now known to be a narcotic drug, is there any real difference between the "drug fiend" and the daily user of alcohol? Chemically speaking, there is little difference except that alcohol is a direct tissue poison while most other narcotics are not, but exert their evil effects by disturbing the functions of the body. Generally speaking, however, the drug addict is on a much lower moral and physical plane than the average so-called "moderate daily drinker."

Whether rightly or wrongly, society has always countenanced daily drinking within certain limits. The man who keeps this indulgence within such bounds that he is not noticeably under the influence of liquor, is not socially condemned, and no stigma attaches to him. The use of other narcotics—opium, cocaine, etc., however, is socially condemned as a secret vice, and a stigma attaches to such indulgence.

Persistence in the use of narcotics, therefore, indicates a much lower degree of moral and physical control than usually obtains in the average steady drinker.

It is probable that occasional moderate indulgence in alcohol for social purposes will continue indefinitely but there are signs that with a more general understanding of the fact that alcohol is a narcotic drug and not a normal food or beverage and that the man who *must* have his daily drink is really a drug addict, daily drinking as well as obvious intoxication will fall into disrepute. When that time comes, the daily drinker will be drawn from the same class as the drug addict.

There are no magic "cures" or specifics for the relief of narcotic habits. Especially avoid all "mail-order" cures, or in fact, any drug or medicine that is advertised as having the power to cure drug addiction. Regular medical treatment can do much for such cases if the patient will come earnestly and sincerely seeking a cure, but the treatment is not so much a matter of drugs as of general measures to restore a broken and battered nervous system to self-control and self-confidence.—Extracts from Bulletin No. 4, Medical Department of Provident Savings Life Assurance Society.

SUGGESTIONS TO TEACHERS

AT least once a year the older pupils should have a lesson on the dangers of opiates and "patent" medicines. For this purpose use the outline given above under "Dangers and Fallacies Attending the Use of Nostrums".

For illustrative matter use the following data: *Journal* pp. 88-90; "The Great American Fraud," *Collier's*; the government bulletin on this subject and matter in current periodicals.

How and When Manhood Becomes Handicapped

BY WILLIAM LEE HOWARD, M. D.

A SHORT time ago a young man was brought to me to see what I could do for his attacks of dipsomania—going on periodical sprees. He was a very brilliant man. At times he was employed on leading metropolitan papers. "At times," I say, because just so often he would disappear in the midst of important work, and sink to the gutter. Everything had been tried—"cures," sanitariums, the prayers of his sorrowing mother, travel, and the family physician. After these various methods failed he had been treated by the church psychotherapists and striven eagerly and earnestly to aid them in their well-meaning work. But, of course, when the uncontrollable impulse came to submerge his awful feeling of physical and mental helplessness, he was swept into the torrent of degradation and carried under.

A careful and minute investigation into his history brought out the following facts: When he was a babe his mother was so engrossed in her social duties—God save the mark—that he was turned over to a young woman to nurse. She is alive and I sought her out. She is a German and always accustomed to drink beer.

While nursing this baby boy she drank beer; constantly consumed large quantities of it, and at times gin, "to keep up her strength", she told me.

"Ever give him soothing syrup?"

"Oh, yes! When — was a year old he became fretful at night, and, as his mother did not like to hear him cry, I gave him some 'quieting drops'."

Now the neurologist can see the whole trouble as clear as a signal light. I have had a score of just such cases.

Every delicate nerve cell, plastic, just growing, developing in this little babe, was constantly poisoned by alcohol or some form of opium—the "soothing syrup". The more these nerve cells absorbed the more they demanded, and what was a pitiable cry in infancy for a stimulant became in adult age an imperative, uncontrollable demand for artificial aid to ease the most horrible pain a man can suffer—emotional depression.

So the child grew to manhood handicapped by nerve cells—the human battery—that could not possibly run his big body and brain except at short periods. He was bound to be stalled while running well along life's road.

(Continued on page 90)

Scientific Temperance Journal

Founded by Mary H. Hunt

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered as second class matter June 1, 1909, at the postoffice at Boston, Mass., under the Act of March 3, 1879.

The Permanent Remedy

THE discovery of the disease germ and the means of combating it, the growing interest in better social conditions and in the possibilities of the new science of eugenics, have greatly improved the prospect of a speedy betterment of the human stock. But the desired end will not be gained without a more general recognition of and campaign against one of the most powerful causes of physical deterioration—the habitual use of narcotic, or nerve-impairing drugs.

There is some truth in the objection occasionally heard, "If you take away alcohol people will use something else, opium or cocaine." Undoubtedly they will if the causes which underlie drug habits in general are allowed to remain. This, however, is not necessary in our present stage of advancement.

Among the various causes, and therefore points of attack in the battle against drug-habits, three stand out much more prominently than the others: unhygienic living, bad example, commercial aggression.

Unhygienic living, whether a matter of under- or overeating, under- or overworking, the dissipation of energy, or what not, results in disagreeable feelings, or a physical demand for relaxation which creates the desire for a sedative or a "pick-me-up."

The imitative propensity so instinctive and universal, particularly among the young, accounts for the rapid spread of an evil practice when once its gets a start.

But the most inexcusable cause is the money-making interest which pushes sales regardless of effects.

We can educate the unhygienic and we can match bad example with good; but the conscienceless trader who seeks his own gain from the mental moral and physical losses of his customers can often be dealt with only by the stern force of the law.

There are thus at least three methods of work open to those who wish to help in this part of the great movement for human betterment.

1. Teaching people to live so hygienically that they will never feel the need of artificial substitutes for natural physical buoyancy.

2. Promoting by example, individually and collectively, opposition to existing drug habits and customs wherever found.

3. Warring fearlessly by rigid laws and the enforcement of laws for the protection of the weak and ignorant against exploitation by consciousnessless greed.

(Continued from page 89)

He was told that he "lacked will power". He must use his will power. How can a man possibly use that which he lacks? He was a human machine that in course of its development was deprived of its normal motor power—strong, self-repairing nerve force—and all because the mother did not know, had never been told, not because she was wilfully criminal.

Her babe was started on a career of drunkenness from its birth. It received alcohol through the beer-drinking nurse. It became poisoned by opium through those cursed "soothing syrups." A well-born babe needs only its mother's normal love and care to "soothe" it. Every healthy babe will cry at times. It is its birthright; it is its way of opening the cells of the growing lungs; it is frequently its only way of rebelling against too tight clothes or other uncomfortable conditions.

Any artificial means of quieting the normal instincts is criminal. Criminal, I repeat. Mothers and fathers, prospective parents, let this charge sink deep into your hearts.—Abridged from an article in *Success*.

WILLIAM T. WARDWELL

Feb. 21, 1827—Jan. 3, 1911

In full, ripe years,
Not stricken down but reapt,
Not felled but garnered like the gold-hued grain.
Be dried, the tears;
'Twere foolish if we wept,
Such death's but sealing to immortal gain.
A mighty man, with giant sweep of mind,
Yet humble faith that, childlike, grasped his God,
And simple love for all mankind.
And native grace, like daisies in the sod,
Art gone: we miss thee in the council place.
Art gone: we lack thee when the war ranks lock.
Art gone: we seek in vain that trusted face.
That shoulder-touch, so firm as living rock.
'Tis finished. Yes; thy work is full, well done:
No laggard task left half-wrought with the night;
But ours is left, the battle all unwon,
And weakened line to wage the long, long fight.
Yet through the night
Thy faith sings light and cheer,
Of laureled victors on the gold-paved street.
Afar the light!
Afar the song we hear!
Comrade, death-winged, we come with hastening feet.
—National Prohibitionist.

Class-Room Helps

Conducted by Edith B. Mills

Coping Successfully with the High Cost of Living

FOR INTERMEDIATE GRADES

SURELY, Miss Johnstone, you have a timely topic under consideration this afternoon", said the Observer one sunny day as she came into the eighth grade room in a boy's school during intermission and noted from the blackboard outline that the hygiene class were studying the relative values of foods in connection with their cost.

"Yes", said Miss Johnstone, "every child in this room knows that the cost of living is increasing rapidly and realizes to some extent at least that it presents a serious problem.

"Of course I might have taken up the plain, unvarnished topics as the outline gives them but I think I can get better results by doing it in another way. I have found that if I can so handle my topics as to make a lesson or a series of lessons afford the solution of some practical problem which the boys see has a direct bearing on their own living it seems to furnish a logical point of contact, encourages research, incites real interest and even enthusiasm, and helps to develop reasoning power. It also helps to link up the information available in books and periodicals with school work for I have the boys watch them and clip the articles which may be helpful in class. Where they are important and cannot be clipped someone often makes an abstract. We have a very simple system of filing them in large envelopes, a series for each study, and the boys do most of the work."

"That is a fine idea to pass on", said the Observer. "Tell me, how do you use the material?"

"Usually, as I did this time", she replied. "I indicated the general points to be covered and told the boys to look them up carefully, and I gave some references which I thought the boys might not otherwise see. I insist on accuracy and thoroughness. When they have thus worked out a problem it becomes a part of their knowledge and is retained.

THE ART OF LIVING WELL

"So, instead of just studying about foods our whole series comes up in this fashion: 'How to cope successfully with the high cost of living.' We have already studied the problem from various angles. First we studied

the constituents of foods and learned in a general way the actual food value of the various staples. Using Voit's ration (protein, 4 oz. carbohydrate 18 oz., and fat 2 oz.) for a basis we compiled various bills of fare which would approximate this balanced ration. This naturally led to a comparison of the cost of the foods available to furnish the ration.

"We found out, for instance, that cheap cuts of beef are just as nourishing as the most expensive ones, and that they are also palatable when properly prepared. The wisdom of buying foods having a low food content was discussed. It was seen that some, such as fruits, are to be furnished if possible because they contain certain salts and acids which are very helpful in conserving the health; on the other hand, others like oysters are palatable but can easily be dispensed with where economy is to be considered.

"The question of pure foods was considered at length and the class came to realize that no matter how nutritious a food may be in its pure state if it is permitted to undergo changes such as come from decay in meats, or if a poisonous substance such as formalin in milk, etc., is present, the substance becomes unfit for food and may cause sickness or death. The canned beef of Spanish-American notoriety was a cogent illustration of the former, the deaths of a number of infants in a New York hospital said to be due to 'doctored' milk, of the latter.

A TEST OF VALUES

"And now we are about taking up the question of beer and other fermented liquors. I think it is a particularly good time to discuss the nature and effects of these drinks because, having the true values of real foods in mind the children can the more readily see the unwisdom of spending for liquors both from the standpoint of economy and of health; and then there is the mistaken idea that these drinks are good for food or harmless appetizers which needs combating because it is false and because it is undoubtedly the cause of much drinking."

After intermission, the class was called to order and she said to the boys, "I saw an in-

teresting statement regarding the German emperor which has a bearing on our lesson today. Can anyone tell what it was?"

Wilton rose and said, "I think I can. It seems that Emperor William has decided that too much beer-drinking will lower the efficiency of his men in the army and navy and he has been lecturing them about it and advising them to join the Good Templars who are total abstainers. The brewers complained about it claiming that beer is healthful and is necessary to the people, is 'liquid bread'."

"Very good", said the teacher. "Many brewers in America make the same claims. On these and other grounds we are constantly being urged to make these drinks a regular part of our dietaries. Before deciding to do so shall we not test them? Are they nutritious like bread? Are they harmless? Can we afford to use them?"

"From what are beer, ale, porter and the like made?"

"From barley and hops", was the prompt reply.

"But isn't barley one of the most nourishing of foods? Why then shouldn't it be true that these drinks made from nourishing grain are nutritious?"

"Isn't it on account of the way it is treated in making the beer?" said one lad.

"How is it made?" she said.

The boy rose and explained that the barley to be used is sprouted till most of its starch is changed into sugar; it is then heated to kill the sprouts, mashed, and boiled with hops and a large quantity of water.

Another continued the story and explained that when the mixture has been cooled, yeast is added. The yeast is composed of millions of tiny plants which feed upon the sugar in the liquid the result being a chemical change. Most of the sugar is changed to alcohol and carbonic acid gas. The fat is all destroyed, and considerable of the food material is washed away in the process.

"Warren, can you tell us how this change affects the food value of the beer?" asked Miss Johnstone.

"It must destroy a great deal of it," said Warren, "for I found in a statement quoted from the *American Brewer's Review* that 'the greater part of the original extract of the wort [solution of crushed malt and the real food substance] is used up in the fermentation'."

"We see then", she said, "that the fermentation has resulted (1) in the loss of a very large percentage of the original food substance; (2) that what there is, is greatly diluted with water; and (3) that alcohol (to

the extent of from 3.75 to 5 per cent.) is present."

A NICKEL'S WORTH OF BREAD FURNISHES

6.4	ounces	water
11.2	"	fuel food
2.	"	(starches and sugars)
2.	"	muscle building food
2.	"	(albuminoids)
2.	"	fat (fuel food)
2.	"	mineral matter
No poison		

A NICKEL'S WORTH OF BEER YIELDS

8.9	ounces	water
.5	oz.	malt extract
mostly ash, with incomputable traces of carbohydrates, gums, and albuminoids that have escaped fermentation and filtration.		
.015	ounces	carbon dioxide
.5	"	narcotic poison, alcohol

"On the blackboard you see what the chemist finds in a loaf of bread and you remember that a nickel's worth of oatmeal or of corn meal would furnish twice as much food as the bread. Beside it is the analysis of one nickel's worth of beer. Bear in mind that some beers would have a little less alcohol and the ales etc., a little more. The extractives vary a little, also. Milk, another liquid, contains more than twice as much nutriment. The drawing (p. 94) prepared from a different analysis shows the comparative value and cost of flour and beer."

"I think" said one boy, "that bread in the solid form is cheaper and would go further."

"But", said Clark, "some men who drink beer say that a pint drink of it satisfies their hunger. We can see there isn't enough food to do it, what does?"

"I am glad you asked that question," she said. "Let us see if we can find out. How much does the ordinary stomach contain?"

"About three pints," said Clark.

"Suppose you fill the stomach 1-3 full," she said.

"I see," he said, "to put so much of any thing in the stomach would have some effect. Is that all?"

"Not quite," she said, "Tell me again what was formed by the fermentation?"

"Alcohol", was the reply.

"What is the nature of alcohol?"

"A narcotic", said Clark, "and a narcotic would just deaden his sense of hunger for a while without really stopping it at all."

"Quite right," smiled the teacher. "I think," she said, "that we all now realize that this so-called food is very expensive but an illustration or two will serve to emphasize it. Marion, will you set down some facts for us? From government records we find that the average American workman earns annually all the way from \$335 in the South Atlantic states to \$670 in the Western states but the average is \$477. Write the latter figure on

the blackboard for us, please. It is said that the average drinker spends \$.50 a day and that, as Marion shows, amounts to \$182 a year or about two-fifths of his whole earnings; surely more than any working man can afford to pay for one such item and for himself alone. But we will take the case of the moderate beer drinker who buys three beers a day which as you see, amounts to about \$55 or more than a tenth of his yearly wages. Here is what one grocer says he will be glad to sell hundreds of times for that sum.' (Marion writes on the black-board.)

WHAT THREE GLASSES OF BEER A DAY WILL BUY IN A YEAR

1 Barrel of flour	10 Pounds of rice
50 Pounds of sugar	20 Pounds of crackers
20 Pounds of cornstarch	100 Bars of soap
10 Pounds of macaroni	3 12-pound turkeys
10 Quarts of beans	5 Qts. of cranberries
4 Twelve-pound hams	10 Bunches of celery
1 Bush. sweet potatoes	10 Pounds of prunes
3 Bush. Irish potatoes	4 Dozen oranges
10 Pounds of coffee	10 Pounds mixed nuts
10 Pounds of raisins	

FOUR BIG BARRELS HEAPED UP

and in the bottom of the last barrel a purse with two pockets; in one pocket a five-dollar gold piece marked "a dress for mother", in the other pocket a ten-dollar bill, marked, "to buy shoes for the children".

"Don't these good things look more substantial than the three daily portions of beer? Perhaps we shall find out that the loss of turkey, flour, nuts and fruit, and the dress for mother isn't all the loss after all. However we will put all these considerations aside for the present.

COUNTING THE REAL COST

"Suppose one happens to enjoy the beer and doesn't mind the expense is there any reason why he shouldn't indulge himself in his three drinks a day? Is there anything else to take into consideration except the disproportionate cost and the insignificant food content of the beer?"

"We found," said James, that there was five per cent., or about one-half an ounce, of alcohol in each pint of beer and that would mean drinking one and one-half ounces of alcohol every day?"

"But what of that?" said Miss Johnstone. Clearly this teacher was determined to make her pupils think for themselves.

The boys looked thoughtful and then a number of hands were raised.

"Our book says that the use of less than that amount of alcohol reduces the amount of muscular work a man can do," said Conrad.

"Enough to make any special difference?" asked the teacher.

Several boys replied. One quoted Dr.

Schnyder's experiments with the ergograph showing that the muscles had less strength and endurance and did 8 per cent. less work than when the men experimented on took as much alcohol as there is in two or three glasses of beer.

Another boy said, "I know a young man who is an expert accountant. About twelve men work with him and he says that at noon some drink a pint or two of beer with their lunches. Every time these men are beaten by the men who did not use beer."

"That corresponds with what Kraepelin, Smith and other scientists have found out about impaired mental work, doesn't it?" said Miss Johnstone.

John told of a friend of his who was on the crack rifle team for several years. "He says," said the boy, "that 'the fellows that don't drink put it all over those who do'. Its just like what the Swedish soldiers found out," he added.

"I read somewhere," said Lincoln, "about the Australian benefit societies. Some of them are made up entirely of men who don't drink and others have both drinkers and abstainers. It seems that the members in the societies containing drinkers average to be sick about twice as often. They are sick about twice as long and are about twice as likely to die, as the members in the societies of abstainers. I don't think those men can be hard drinkers either. They wouldn't have money enough to go in a benefit society if they were", he added shrewdly.

"Probably they wouldn't be admitted at all if they had been hard drinkers," said the teacher.

Other boys mentioned other points such as the fact that insurance companies have found out that moderate drinkers average to die years sooner than abstainers in the same class of society; that the railroads and some other kinds of business won't take men that drink; that drinkers are more likely to get into dishonest ways; and that the children of drinkers are not so apt to be bright and strong.

Finally one of the finest and most manly of the boys capped the climax by saying, "I think about the worst thing about it is that using even a little drink gives it the chance to get the upper hand of a fellow so that when he knows the liquor hurts him he can't seem to stop. I mean to be my own master."

"If then," said Miss Johnstone in closing, "we find that alcohol is a narcotic, injurious to the body and likely to create a drug habit, we must avoid it even as the milk containing formalin, which may be more powerful but does far less damage. To use it even in moderation greatly increases the cost of living

and because it impairs working ability and brings added expense on account of preventable sickness. Class is dismissed."

LESSON SUGGESTIONS

PURPOSE. To show that alcoholic liquors are expensive, harmful and dangerous and therefore it is unwise to use them.

LESSON POINTS. Consideration of the food value of the beer without reference to any injurious effects of the alcohol shows:

1. That (a) the percentage of food content is so small that to get any considerable nourishment very large amounts of beer must be ingested; and, (b) that compared with the relative value of the staple food products the price is exorbitant, but

2. Beer cannot properly be classed as a food because the chemical changes due to fermentation have produced an appreciable amount of the irritant-narcotic poison, which being mixed with what nutrient is present, renders the whole unfit for food.

(It is important to teach the process of fermentation in order that pupils may clearly understand why beer, etc., made from nourishing grains are not only useless but harmful. The action of the yeast plants in producing alcohol is analogous to the action of the bacteria of putrefaction in meat; in each case the organisms have produced toxins or poisons, harmful to human life and health. Note that the very word "intoxicated" means poisoned. Milk, vegetables and other foods which contain harmful or poisonous drugs are by common con-

sent excluded from human consumption, it even being considered necessary to protect the public by drastic pure food laws. Are such laws justifiable? Why?)

Conclusion. It is Unwise to Use these Liquors because

1. They are too expensive, on account of (a) disproportionate price; (b) of probable loss from impaired working ability, and greater liability to sickness and death with their resulting expenses.

2. They are dangerous because if used with any considerable frequency they are likely (a) to impair the functions of the vital organs and even the organs themselves; (b) to lower body resistance to disease germs or to toxic substances (lead, etc.); (c) to injure the brain so that (1) the moral and reasoning faculties, higher ideals and self-control are impaired and (2) insanity or crime may be caused; (d) to create an irremediable and destructive drug habit; and (e), to injure offspring.

In addition to the points suggested by the text, the children might be asked:

How far would the food the grocer would furnish for the three glasses of beer a day go toward feeding one or more members of the family for a year? What per cent. of the average annual earnings would be spent on three drinks a day? What part of the year would this sum shelter a family, rent at \$10 a month? Suggest that shares in building and loan associations could be bought for this sum and thus a home acquired. Use the cuts pp. 84-5, to show effects of alcohol on offspring, the article on lipoids p. 81, for explanation of damage to nervous system, etc.

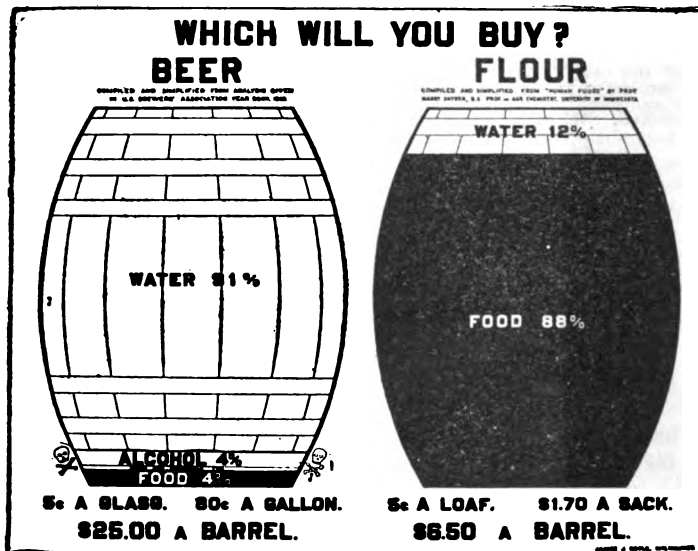


Illustration from Anti-Saloon Year-Book, courtesy of Anti-Saloon League of America

Caring for the Baby

IN bringing up this topic for consideration, it will add to the interest if the teacher plans to have some pupil bring a healthy baby brother or sister of perhaps a year old—one that will not be afraid of the children. Present the baby to the class. How many other children have a baby at home? Let the children speak of the cunning ways of babies and the fun one can have with them. What are they to be by and by? If they are to be men and women who can be happy themselves, give joy to others and be useful or even famous in the world, what must they have?

See that the class get the idea that not only will the babies need properly developed mem-

bers, abundant health and vitality in general, but will need good sight and other senses, and a keen mind. (If any child is likely to lack these essentials, speak of some cases of men or women who have loved, been beloved, and served in spite of handicaps.) Emphasize the importance of such an equipment for life and how much harder living must be if handicapped. Evidently it is so valuable that those who understand must take care of themselves and give particular care to these dear little helpless ones. How can we tell that this baby is healthy? A healthy baby has bright eyes, clear skin, pink cheeks, and does not cry much. What is true of the baby's flesh and of its bones? Note that the bones

are very soft and the flesh tender. The baby is like a flower or a tiny young tree—very sensitive to good or bad treatment. Question the children and get their ideas as to what care the baby ought to receive in order to continue to grow healthily and happily to maturity. These will fall under several general heads which may be written upon the blackboard, the subordinate points being developed logically, placed under each, and copied by the children.

SLEEP AND FRESH AIR FOR THE BABY

Discuss briefly with the children the need of fresh air for everyone. When or how much ought one to have? If older persons who are not growing need so much, surely the baby does too. Lead the children to see that the baby as well as older persons will be stronger and better if he has air at night or if he has his naps out of doors, but warn that since he is more sensitive to cold he must be well wrapped up, screened from the wind, and looked after. When taken out for his daily airing, all these cautions must be carefully observed, and in addition, his eyes must be shaded so that the bright light may not weaken them. Suggest the helplessness of the baby and so the need of great thoughtfulness on the part of the little caretaker.

FEEDING THE BABY

WHAT is fit food for the baby? Review briefly the need of food, of digestion, and the principle organs of digestion, laying special emphasis on the importance of good teeth. Lead the children to speak of the temporary pain and the illness that may come from eating the wrong food, or too much, or too often, or from under-mastication. Point out that many sickly people became such because their digestion was not taken care of in childhood.

Milk. What difference between the digestive organs of the baby and an older person? See that the children realize that these organs, like all the rest, are "baby organs" if one might so call them, that is, they are not very large or very strong, can not possibly do hard work or very much of it. What ones are entirely lacking? What does this clearly indicate regarding the use of solid food?

Something else points that way, too. What food is provided for calves and other young animals and for babies? Recall briefly that milk contains all the kinds of materials needed for the body. Show that regular hours for feeding are still more important for the baby than for the older child. Instruct as to the baby's need of water, the care of milk, of bottles, etc. In warning against solid foods and sweets for the baby under one year old, recall

the fact that in older persons the strong digestive organs helped by the teeth require 3 to 5 hours to digest food and sometimes fail at that. To try to make a baby's weak organs do such work is to invite disaster, and it is not uncommon for babies to fall dangerously sick and even to die from cholera infantum and the like after swallowing such foods.

Solid food, what and when. At what age does the baby have most of his teeth? Then we may suppose that at a year he may begin to take solid food. However, we must remember that he does not yet know how to chew his food well or understand the need of doing so. Moreover, the digestive organs are still weak. Considering these things what foods can be suggested as easy enough of digestion to be fit for the baby during his second year? During his third year? Encourage the children to name the foods they consider suitable. Explain why certain ones they mention are not proper and may be harmful and take this opportunity to point out the harmfulness of candy and of any other undesirable foods which experience shows are being used in the homes. Warn against giving children beans, nuts, dried fruits and pop-corn and the like until they can be taught to masticate them thoroughly.

Discuss the question of drinks showing that milk and water are the proper drinks. Note that milk is also a food and ought not ordinarily to be given between meals; and that the water should always be boiled and cooled if there is any reason to think it is not pure. Babies are more sensitive to disease germs than older persons. Tea and coffee even the mildest, should not be given at all. If any child suggests beer or any other alcoholic drinks the question may be dealt with at once or put off until the discussion of the next topic.

The following or a similar list of foods suited to the baby should be written on the blackboard and copied by the children. Review occasionally till all have the main facts well in mind.

WHAT AND WHEN

For children from one to two years old: Fresh milk, well-cooked cereal, dry toast, or unsweetened swieback, broth, and coddled eggs; a little orange juice, prune pulp, baked apple or apple sauce, may also be given.

For children during the third year: Small portions of finely cut chicken, lamb or beef; boiled rice, baked potato, spinach, asparagus tips, celery, carrots, squash and string beans (all thoroughly cooked). For desert, junket, custard, plain rice or tapioca pudding, no tea, coffee or fermented drinks.

KEEPING THE BABY WELL

Why not give medicine. There is no doubt that much more medicine is given to children than ought to be; babies, in particular, often being dosed when they are merely fretful.

Review the points already made, i. e., the baby must have sleep, plenty of pure air and good food, and be guarded against accidents, etc. Note that if the baby is so cared for he will seldom cry. Point out that if he does get fretful and cross pains should be taken to find out in what way he is suffering rather than to dose him. Perhaps his clothing irritates or is tight. (Chafing may come from cotton undergarments boiled with lye or soap.) Perhaps a pin pricks him. (Only safety pins should be used.) He may be thirsty and a few spoonfuls of cool water will set him right; constipation and over-feeding are fruitful causes of infantile misery and the remedy for each is certainly to be sought in regulation of diet, not in drugs.

The definite teaching showing that hygienic treatment is the proper one leads directly to the next point that to give babies drugs like soothing syrups to stop their crying or indeed to give, except by a physician's orders, any medicine which is likely to contain narcotics (as cough medicines and those for summer complaints which usually contain some form of opium) is dangerous.

Danger of overdose. Show that owing to the extreme sensitiveness of the baby it is hard to tell just how much to give and so there is danger of an overdose which may cause death.

Danger of habit forming. Tell a story such as that found on p. 89 of a case where soothing syrups given to a little child so impaired health and nervous control that the person was handicapped all his life, being unable to make a permanent success of business because he had such a mania for drink that when seized by the craving he was unable to control himself and was plunged into disgrace. Note that this man (like many others) grieved over his condition and was willing to do anything to be free from the drink but his disease seemed incurable. The records of physicians and of hospitals would show many such cases.

It appears that where the effects are less dreadful, still the child may be very nervous or become a cigaret "fiend."

What other narcotic, somewhat less powerful is often used? Might we expect that the effects of alcoholic drinks on young children would be similarly dangerous? The following true story will show that alcohol like opium is dangerous.

Five years ago a puny baby was born. He

was the only child and the parents not understanding the harmfulness of alcoholic liquors, thought that a little liquor with nearly every feeding would strengthen the baby boy and enable them to save him. He did live to grow up but he had little power of self-control and became a drunkard. When it was too late, his mother saw and regretted the fearful mistake she had made.

Danger of impairing health and growth. Point out that alcohol is an irritant as well as a narcotic and can harm the baby in other ways than through the brain and nerves. It may affect the blood and some of the organs of the body and the baby may not grow so large or strong. Older children, too, are almost as likely to be harmed.

Show the picture of the frog's eggs and the tadpoles, and tell the story of how an English scientist (Eccles) took a certain number of these eggs and put half of them in a bowl of clear water and the other half into a bowl of water containing a tiny bit of alcohol (10 drops of alcohol to an ounce of water). The bowls were kept side by side. The scientist found that many of the eggs in the alcohol and water failed to develop, and among those that did develop, many were "undersized and feeble." The pictures show how alcohol hinders the growth of a tadpole. Dr. Eccles also found out that a little alcohol given chickens hindered their growth. Dr. Hodge proved that kittens do not grow as well if they are fed even a little alcohol. If alcohol hinders the growth of young animals, we must believe that it can not be good for growing children. Point out that the alcohol is just the same and just as injurious in beer, wine and cider as in whisky or brandy, the only difference being that the former are less strong.

Guard against the children's thinking that a single use or two of any of the opiates or the alcoholic drinks will make drunkards or stunt growth, but leave the impression that always there is danger in using them much and since no one can tell how dreadful the results might be, it is safest for children and also for grown people to leave them alone.

REFERENCES: Chapter XXIX of "Building and Care of the Body", Millard; "Emergencies", Gallick Hygiene Series; and some of the popular magazines.

LESSON SUGGESTIONS: Use the material in sections teaching a few points at a time and making sure the children understand *why* certain things should or should not be done. If time is limited, or conditions make it advisable, the whole school may be taught the main points on a Friday afternoon and the mothers may be invited to come. Ask the children to embody the main points in a story of how some child took good care of a baby brother or sister.

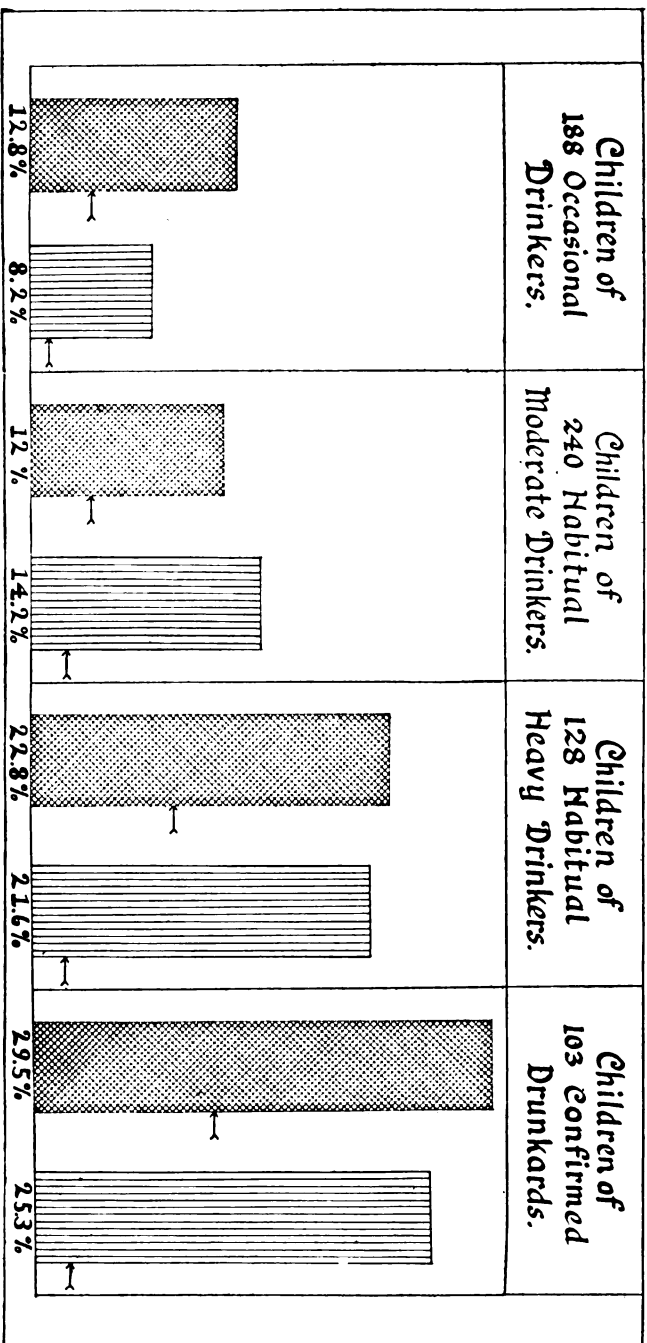
Let them draw or cut circles or squares representing table tops and write on them a list of foods suitable for the second and for the third years. Or, they may draw the outlines of the proper foods, e. g., a tumbler of milk, or instead, cut them out.

Tuberculosis and Nervous Diseases

... in the ...

Children of Drinkers

Arrows indicate extent of same diseases in fathers. *Diagonal lines* represent Tuberculosis. *Perpendicular lines* represent Nervous Diseases. The nervous diseases included idiocy, epilepsy, feeble mindedness, St. Vitus Dance and others.



Copyright 1911, by
Scientific
Temperance
Federation, Boston.

Alcoholic poisoning and degeneration

Prof. G. Von Bunge.

A New Method!

Travelling Loan Exhibit

WHAT IS IT?

Exhibit consists of 25 Colored Charts (framed or not as desired, size 22x28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other infectious Diseases, Longevity, etc. No objectionable details. Based on most reliable scientific experiments. Excellent for No-License Campaigns.

WHO USE IT?

General Expositions
Teachers' Institutes
Charitable Organizations
Christian Endeavor Conventions
Sunday School Associations
Temperance Lecturers and Conventions
Physicians, Ministers
200,000 persons have seen these charts in two years.

Send for Full Information as to Expense and Plan for Use.

THE SCIENTIFIC TEMPERANCE FEDERATION,
23 Trull Street, Boston, Mass.

National Temperance Advocate

A TEMPERANCE PAPER FOR THE FAMILY. TEMPERANCE STORIES, POEMS, FIELD NOTES. MONTHLY NEWS AS TO WHAT GOOD TEMPLARS, ALL CHURCH TEMPERANCE SOCIETIES, ETC., ARE DOING. JUST WHAT YOU NEED.

Advocate, \$1.00)
Journal, - .60) BOTH \$1.25

ALCOHOL in Every-Day Life!

ILLUSTRATED LECTURE

of scientific experiments, and a few attractive physiological plates. Most important phases covered. Nothing objectionable.

SPECIALLY DESIRABLE FOR

Labor Unions, Lyceums and Chatauquas, Societies of Christian Endeavor, Parental or Industrial Schools, No-License Campaigns, Public Temperance Meetings held in Churches or by Temperance Organizations, Social Welfare Workers and for High and Normal Schools and for Teachers' Meetings.

Subjects of Some of the Slides

Alcohol and Hard Work.
How Muscle Work is Measured.
Alcohol and Endurance.
Which Way Lies Success in Sport.
A Sixty-Mile Walking Match.
What Yale Football Men Say.
The Cost of a Mistake.
A Story for Bookkeepers.
Effect of Alcohol on Marksmanship.
Alcohol and Typesetting.
What the Shoe Manufacturer Knows.
A Healthy Nerve Cell.
What Alcohol Does to the Nerve Fibres.
Why Doesn't he Control Himself?
Where Accidents are Liable to Occur after Drinking.
Drink and Lead Poisoning.
Comparative Sickness of Abstainers and Non-Abstainers.
Drink and Impaired Vigor of Children, Etc.
Full information on request.

THE SCIENTIFIC TEMPERANCE FEDERATION,
23 Trull St., Boston, Mass.

NEW CHART SERIES WHAT YOU HAVE BEEN ASKING FOR : : : :

Inexpensive reproduction of the charts. Use them in Day and Sunday Schools. Set people thinking by displaying them in Shop Windows, Manufactories, Stores, on Bill Boards, etc.

Three of the series now ready

"Comparative Sickness of Drinkers and Abstainers" (see Dec. Journal.)

"Employers Who Prefer Non-Alcoholized Workmen" (see Jan. Journal.)

"Tuberculosis and Nervous Diseases in the Children of Drinkers" (see Feb. Journal.)

Handsomely printed in red on coated paper, size 9x13 in.

Each, \$.05 Trial Order (3), only \$.10 Per Dozen, \$.25

REMARKABLE SPECIAL OFFER

ALCOHOL AND THE HUMAN BODY

By Horsley and Sturge. Recognized as the most complete, reliable, interesting and valuable book on Alcohol and Human life, health, efficiency, morality, and heredity, yet published. 370 pages; 16 beautiful plates; 21 diagrams.

SCIENTIFIC TEMPERANCE JOURNAL

Packed full every month of readable, up-to-date, carefully stated facts about alcoholic drinks and narcotics gathered from scientists and scientific papers all over the world. Specially helpful to teachers and church, S. S. and social workers.

SCIENTIFIC TEMPERANCE JOURNAL,
23 Trull Street, Boston, Mass.

Enclosed find one dollar for which please send *Alcohol and the Human Body* (postpaid) and the *Scientific Temperance Journal* (one year) to

Name

Address

SCIENTIFIC TEMPERANCE JOUR

Digitize 23 Trull Street, Boston, Mass.

SCIENTIFIC TEMPERANCE JOURNAL

— *Continuing the* —
SCHOOL PHYSIOLOGY JOURNAL



Photograph by Myron J. Cochran, Waverley, Mass.

Published at -
BOSTON, MASS.

MARCH, 1911

New Century Series

—OF—

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fulness and accuracy of the treatment in regard to the nature and effects of alcoholic drinks and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

Total Abstiners

Through Classification

may receive equity in premium cost with an old line, legal reserve life insurance company

**It will obligate you only
the cost of a Postage
Stamp to know about it**

Our low premium Perfection Endowment and Monthly Income policies protect every contingency.

**Write to-day—give your age
Do you want a position ?**

We want to increase our agency force. Write now. Address

TOTAL ABSTINENCE DEPARTMENT

Security Mutual Life Insurance Co.
Binghamton, N. Y.

THE SCIENTIFIC TEMPERANCE FEDERATION

American Branch of the International Temperance Bureau

An Educational Temperance Organization

Purpose.—To make known in every possible way, in popular form, the proved facts of science concerning the nature and effects of alcoholic drinks and other narcotics, in order to secure intelligent conviction based on demonstrated fact.

Methods.—The dissemination of facts by the following and other methods: Personal Correspondence, An Editor's Press Circular, Loan Exhibit of Scientific Charts, Popular Leaflets, The Scientific Temperance Journal, A Stereopticon Lecture.

The Scientific Temperance Federation has a unique place to fill; a distinct message and work. Its aims are fundamental and practical.

Its Membership

Advantages.—All members are entitled to ask for special information on temperance topics and to receive free, notices of useful new publications, samples of leaflets or other information published by the Federation.

Associate Membership is open to all who desire (1) to have fuller acquaintance with the alcohol and narcotic question which membership in the Federation affords, or (2) to help extend popular knowledge of the truth on these subjects, or (3) to promote a rational educational method of preventing intemperance. Members' fees \$1.50 annually and all members may receive the SCIENTIFIC TEMPERANCE JOURNAL at the special price of 50 cents.

THE SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull Street, Boston, Mass.

REMARKABLE SPECIAL OFFER

ALCOHOL AND THE HUMAN BODY

By Horsley and Sturge. Recognized as the most complete, reliable, interesting and valuable book on Alcohol and Human life, health, efficiency, morality, and heredity, yet published. 370 pages; 16 beautiful plates; 21 diagrams.

SCIENTIFIC TEMPERANCE JOURNAL

Packed full every month of readable, up-to-date, carefully stated facts about alcoholic drinks and narcotics gathered from scientists and scientific papers all over the world. Specially helpful to teachers and church, B. S. and social workers.

SCIENTIFIC TEMPERANCE JOURNAL,
23 Trull Street, Boston, Mass.

Enclosed find one dollar for which please send *Alcohol and the Human Body* (postpaid) and the *Scientific Temperance Journal* (one year) to

Name

Address

**BOTH for
a
DOLLAR BILL**
(till May 1, 1911).

SCIENTIFIC TEMPERANCE JOURNAL, - - 23 Trull Street, Boston, Mass.
Please mention the Scientific Temperance Journal when writing to advertisers.

Scientific Temperance Journal

Vol. XX

BOSTON, MARCH, 1911

No. 7

The Divine Heritage

By Louise Guiney

Why bowest thou, O soul of mine
Crushed by ancestral sin?
Thou hast a noble heritage
That bids thee victory win.

The tainted past may bring forth flowers,
As blossomed Aaron's rod,
No legacy of sin annuls
Heredity from God.

—Selected.



The Seat and Sequel of Some Alcoholic Delusions

By W. PFAFF, M. D.

THE brain centers through which human reasoning is carried on are the ganglion cells of the gray matter which control motion as well as thought. It is these organs which prevent us from using our bodies for purposeless and unreasonable movements, for putting any sort of fleeting thought into immediate execution, from striking upon the least provocation, from retorting immediately to angry words, from expressing a thought before we have tested its accuracy, in brief, from doing anything before we have considered it.

TAKING OFF THE BRAKES

It is these centers which enable us to weigh our words "in the balance" and thus give rise to the saying, "First weigh, then risk." These are the organs of logical thought, of reason, and of judgment. Alcohol paralyzes them. As a result, soon after it is introduced into the body, lively signs of external activity begin and steadily increase as long as the muscular apparatus remains unaffected. Then follow talkativeness even in those at other times reticent, and lively movements of the hands and feet, particularly in persons who have not a large amount of self-control.

Alcohol makes one easily accessible, ready to put up with any kind of society, brings animation into a previously "stiff" company, loosens the tongue, removes diffidence, embarrassment and scruples concerning doubtful conversation and puts one into a state of high spirits in which care and fatigue are forgotten. Discretion, which would restrain the tongue from offensive words, the hand from rash acts, ceases, and there arises a self-satisfaction, even self-aggrandisement, in short, a loss of the critical faculty, showing clearly that reason, which differentiates man from the animal, has ceased to act.

INTERFERENCE WITH DANGER SIGNALS

It is because of the narcotic nature of alcohol, which paralyzes first the highest and noblest functions of the brain, then gradually the nerves and muscles and finally consciousness, that the drinker thinks himself better than before, while he is gradually losing the ability to locate himself and to take note of the serious disturbance going on in the machinery and substance of his body. This characteristic feeling of well-being is called *euphoria*.

THE ALCOHOL PLEASURE BUBBLE PRICKED

Let us suppose now that such a condition affords the pleasure—if in its rudimentary beginning it is really a pleasure—that certain professors expect from alcohol, and that it is needed to overcome many of the discomforts of life. Since this is pleasure that is possible only by injuring the organs of reason should it not be avoided? This sense of well-being can hardly be called a pleasure for the forgetfulness which it causes is followed by an awakening in which all unpleasantness appears worse than ever, while the enjoyment from its use destroys real enjoyment, and many things that would otherwise be a pleasure become distasteful.

What good, then, does the alcohol-narcosis do if it brings upon men evil and misery, sorrow and trouble? Are the misery and sorrow lessened by the forgetfulness that alcohol caused? Are the evil and trouble smaller? No, but the power of resistance against the strokes of destiny, the clearness of understanding and the steadfastness of character needed to face the difficulties of the situation suffer loss, and from drink to drink the danger increases that under the influence of both misery and alcohol the man's ability and character will be impaired and that he will become a true victim of alcohol.

TOLERANCE NOT A SIGN OF STRENGTH

When one considers that with the present practice of taking alcoholic drinks daily, often many times a day, the alcohol each time acts upon the cells altered by the previous drink and not yet recovered, it is not difficult to see that every new attack leaves them in a worse condition than before. Gradually, even with moderate regular use, a chronic change may take place causing a serious impairment of functions.

Again experience teaches that those accustomed to the use of alcoholic drinks who can "carry" most, need more to produce the euphoristic ("happy") condition. The reason for this apparently is that it takes more alcohol to depress (paralyze) the altered brain cells. This explains the increasing per capita consumption of alcohol and the manner in which the drinker is led to drunkenness. But the degree of tolerance of alcohol is the measure of defectiveness and obtuseness of the body instead of the mark of a high degree of efficiency. This cannot be doubted by anyone who knows:

1. That tolerance cannot be kept up indefinitely. There is often a terrible end, delirium tremens or death. Even the greatest sot dies from unusual indulgence in drink, from acute alcohol poisoning.

2. That the wine or beer tippler who is

never drunk, shows the same kind of changes in heart, blood vessels, brain and nerves, as the steadily drinking drunkard.

3. That the formation of anti-toxins is diminished by the use of alcohol, an evidence of the fact that the organism loses its power of resistance.

4. That the life period of the alcohol-user is shorter than that of the abstainer.

Tolerance of alcohol results from its making itself indispensable. It leads a man on to his own injury and final ruin. If, therefore, a man accustomed to alcohol is sensible of no influence following a moderate drink, (and nothing is observed by others), and he thinks he is able to drink still more before he has had enough, he has no right to say that alcohol does him no harm, for it exerts its destructive action subtly and slowly, but none the less surely, and it will finally be manifest, even if not for many years, perhaps upon his children. The fact that a sound, strong constitution, by becoming accustomed to alcohol, can "carry" a great deal, while a "weakling" soon has "enough," is only proof that it is a serious mischief to the man of sound strong body, for it is certainly a diseased condition which renders him insensible of the fact that he has had enough alcohol and increases his desire for more.—*Translated for the SCIENTIFIC TEMPERANCE JOURNAL.*

Old Fashioned Ideas

BY E. L. TRANSEAU

IT was lately related of a student in one of our eastern colleges that he wrote home to his parents, "You will have to give up your old-fashioned ideas about drinking and smoking." The young student had come under the influence of a college president who not only uses wine and tobacco himself but offers them to the young men under his charge.

It is not surprising, therefore, that in such an atmosphere a boy, not yet well informed in history, should be led to think the moral standards of his parents old-fashioned and the "liberal" standards he had encountered in college new. But the facts are just the reverse.

Total abstinence is a newer fashion by many centuries than wine-drinking which antedates history. The preaching of moderation even is as old as written records. But abstinence is the very newest fashion, so new that it had not yet spread from this new country to continental Europe when some of our present

college presidents and professors were there as students. And it is the old drinking customs of those universities that some of these professors seem to encourage implanting here. Now there are over 40,000 abstainers in Germany, and many more thousands in Sweden, Norway, Switzerland, all following the new fashion which this boy's parents and grand parents helped establish here in America.

Abstinence old-fashioned! All the world is rubbing its eyes over the German Emperor's recent recommendation of total abstinence to the naval cadets. And there is nothing old-fashioned or "mollycoddle" about the reasons he gave for it—the times demand men of iron endurance and clear brains; victory in the next war will be with the side that uses the least alcohol; by training the soldiers to renounce alcohol, the whole nation will be uplifted morally. (See page 105.)

Here we have not only a new fashion but its advocacy by an emperor and among its exalted followers are the Empress of Ger-

many, the Queen of Holland, the Crown Prince and Princess of Sweden, and the President of the United States.

When this college boy begins to study the latest phases of political economy, he will learn, if his professors are up-to-date, how England and Germany waked up a few years ago, to find that American industry was seriously rivalling their own, and sent delegations to America to ascertain the reason. These reported back that the greater sobriety of American workmen was a large factor in the success of the American manufacturer. Since then, German manufacturers have begun to follow our New World fashion of barring alcoholic drinks from the workshop.

We are just beginning to hear of a new force in social evolution, the social conscience. It appears to be an extension of the "New England conscience" from the individual to society. Its aim has broadened from personal to human betterment. This social conscience is beginning to see in beer, wine, and other liquors, a great hindrance to human bet-

terment, and like the Kaiser, is beginning to advocate abstinence from these as a means of uplifting the people morally.

The spread of abstinence in Europe is largely the outcome of scientific discoveries which were impossible before the era of precise methods of scientific investigation, and that period is usually dated from about 1891.

And tobacco? Where is the newness in the use of that? It was a fashion of unknown antiquity among the American red men over four hundred years ago when the white race began copying it, while the anti-tobacco leagues and literature are scarcely a quarter of a century old.

No, young men and women, in college and out of college, it is wine-drinking and dissipation in all its forms that are hoary with age. But abstinence from alcohol and other stupefying drugs is the new ideal which will become more and more "fashionable," as men increase in knowledge of their nature, and in appreciation of the standards of physical and mental efficiency and moral responsibility.

If we are hoping to reform mankind, we must begin, not with adults whose habits and ideals are set, but with children who are still plastic. We must begin with children in the home, the school, the street, the playground.—Charles W. Eliot.

The Relation of Temperance to Life Insurance

R. Henderson, Assistant Actuary, Equitable Life Assurance Society

SO far* we have been considering total abstinence at one end of the scale, let us look at the other side of the picture and examine the effects of the immoderate use of and association with alcoholic beverages. Some few years ago the Actuarial Society made a special investigation of certain doubtful or suspected classes of risk, which had been taken by the companies at regular rates.

One class so investigated, was composed of reformed drinkers, that is, people who at some time prior to being insured were in the habit of drinking immoderately, but who, when insured, were believed to have reformed. This class showed 299 actual deaths compared with 238 expected according to the standard used as a basis, or an excess of 26 per cent., no doubt partly due to after-effects of previous habits and partly to the reform in many cases being only temporary.

Certain occupations connected with the liquor trade were also investigated, among others wine or liquor sellers who were divided into two groups according to whether they

*The first part of the address considers the evidence showing that the life expectation of moderate drinkers averages to be less than that of abstainers.

were or were not personally total abstainers. The total abstainers in this occupation showed 411 deaths compared with 344 expected, or an excess of 19 per cent. while the non-abstainers gave 1704 actual deaths to 1300 expected, or an excess of 31 per cent., a difference between abstainers and non-abstainers of 12 per cent. of the expected. It will be noticed that continued association [with the liquor traffic] appears to have an injurious effect although part of the excess mortality among those who returned as abstainers may have been due to habits subsequently formed or cancelled when applying for insurance.

Other occupations gave similar results so far as total mortality is concerned, no analysis being made with respect to personal habits; thus hotel keepers, not attending bar gave 22 per cent. extra mortality, brewery employees 35 per cent. and distillery employees 7 per cent. The comparatively favorable result in the last case was probably due to the fact that the product of a distillery is not ready for use when it leaves the distillery, while the brewery employees ordinarily have free access to its product.

In 1900, the company with which I am

connected, commenced to insure impaired lives at an extra premium, and among those impaired lives were some in which the impairment was connected with the use or handling of alcoholic beverages. Our experience with these classes is not yet of very great weight, but so far as it goes it confirms the general results on this point. In particular, those reported as becoming intoxicated occasionally but less frequently than once a month showed 26 deaths where 16 were expected, an excess of 60 per cent.; and those reported as

becoming intoxicated monthly or oftener gave 18 deaths where 6.4 were expected or nearly three times the standard rates. It is perhaps needless to say that we ceased some years ago, when we first noted the tendency in this direction, insuring the latter class on any terms. As a result of these experiences I think it may be taken as indicated with a fair degree of weight that total abstainers show a favorable mortality as compared with the general average of non-abstainers.—*From an address before the Inter-Church Federation.*

* * *

**"Fate served me meanly, but I looked at her and laughed,
That none might know how bitter was the cup I quaffed.
Along came Joy and paused beside me where I sat,
Saying, 'I came to see what you were laughing at.'"**

* * *

A Flemish View of a World-Wide Problem*

BY HON. FRANS VAN CAUWELAERT

ALCOHOLISM is diminishing the strength of our people, filling our prisons and insane asylums, bringing our children into the world afflicted with hereditary weaknesses which later, through inexcusable neglect renders them an easy prey to revelry and moral decline.

It is impossible to present in one statement all the dangers involved; yet we may affirm with unspeakable sadness, that no joint remains untouched.

Even our industries are affected by this condition; it can be incontestably shown by figures that alcoholism is a bottomless pit into which the wealth of our people disappears.

It is to our shame that, although not the worst, we are one of the worst of the drinking nations. We pay out more millions for drink than for all our taxes, and these millions do not include the loss to the nation in moral character, as our prisons and insane asylums testify. Our people have strength but let us not further undermine it, let us not continue the risk of moral deterioration by alcohol.

Alcohol is the worst enemy of the working class and of all working men's societies. The drunkard is a dead weight upon them because he can not perform the obligations which his membership imposes. He is a continual burden and by his inability to save he diminishes the savings of others.

A grand procession passed through the streets of our chief city this morning exciting admiration. But if instead there had been a procession of the sorrowing widows and children whose fathers have fallen victims to alcoholism, gladness would have fled out of the city; the spectacle would have been too

terrible for our eyes to have witnessed.

Alcoholism is the pestilence of our day. Every one who has thought about it agrees that legislation has done too little to prevent it, yet the leaders of the various parties are deaf to the warning. The single measure which has been taken has produced no effect because public opinion is not yet sufficiently aroused to the danger.

The evil is one that is not only the delight of the drinking crowd but is favored by too many magistrates and public officials. It is a startling fact that 200,000 inn-keepers have an interest in the consumption of drink.

Against this confederacy on the side of alcoholism we must oppose a confederacy of all those who perceive the danger. We must learn to check the evil among the working men by better wage conditions, by the encouragement of frugality, by hygienic housing.

The greatest obstacle is the ignorance of the people. Every member of our temperance societies should therefore be active in distributing information. We must bend every energy to directing our people to higher enjoyments.

Parents we must depend largely upon your ability to instruct your children, and we must also have the help of teachers, clergymen and those in the higher professions. All classes of society have a duty to perform in this matter.

We must win every year thousands of converts. If we do this, at the first jubilee of our present reigning sovereign we shall be a people that are not only in a flourishing state commercially and industrially, but a people whose moral strength and worth of character will give the best assurance of our country's future welfare.—*Journal Ligue Patrotique contre L'Alcoolisme.*

*From a speech at the Anti-Alcohol Demonstration (Brussels, June 1910) in the presence of the king, Cardinal Mercier and many other distinguished guests.

Behold the Earth

By Ella Wheeler Wilcox.

Behold the earth, swung in among the stars,
Fit home for gods, if men were only kind.
Do thou thy part to shape it to those ends,
By shaping thine own life to perfectness.
Seek nothing for thyself, or thine own kin,
That robs another one of hope or joy.
Let man toll in poverty and pain
To give thee unearned luxury and ease.
Feed not the hungry servitor with stones,
That idle guests may fatten on thy bread.

Look for the good in stranger and in foe,
Nor save thy praises for the cherished few.
And let the weakest sinner find in thee
An impetus to reach receding heights.
Behold the Earth, swung in among the stars,
Fit home for gods: wake thou the god within,
And, by the broad example of thy love,
Communicate omnipotence to Men.
All men are unawakened gods. Be thine
The voice to rouse them from unhappy sleep.
—From Ainslee's Magazine.

An Unsatisfactory Stimulant

THE time was when alcohol was regarded as a necessity in medicine, valuable not only in emergency, but as a part of routine treatment of many diseases. Faith inculcated in it by medical use, is still bearing fruit in the family whiskey or brandy bottle kept in the medicine closet "for use as a stimulant in emergency" or to serve "as a tonic."

But meanwhile, the practical physician, like the Scotchman, began to "hae his doots" about the usefulness of alcohol as a remedy. As a result, he has been quietly sending it the way of many other discarded medical practices. Today all physicians are agreed that alcohol should never be used on lay prescription; all physicians prescribe far less of it than even ten years ago; and a constantly increasing number do not use it all.

Probably the most persistent popular idea of alcohol as a medicine is that it is necessary in acute diseases like pneumonia, typhoid, etc., as a stimulant. Dr. J. L. Miller of Chicago, in an address at the American Medical Association, 1910* reviewed modern experiments and careful observations as to the effects of alcohol on the heart and circulation, especially in acute infectious diseases. With animals, in a few instances the alcohol had a favorable effect, but in the majority of trials by acting as a depressant, it simply increased the weakness of the nerves controlling the blood vessels, which the experimenter had proved to be the chief cause of disturbance of the circulation in these diseases. With a quantity of alcohol equal to that in four-fifths of a tablespoonful of whiskey taken by a man, there was a slight improvement in blood circulation in about five minutes, followed by a depression that lasted forty-five minutes. With larger doses, the equivalent of two and one-half tablespoonfuls of whiskey, the effect from the first was depression.

AN UNDEPENDABLE REMEDY

In all the experiments it was difficult to find for any single individual what was the smallest or the largest amount required for a

stimulating action. "In this respect," said Dr. Miller, "it differs from other heart tonics, as with digitalis, for instance, we may be certain that a given amount will affect the heart in a characteristic manner. Alcohol must always be an unsatisfactory medicinal agent, for a remedy which in moderate doses may or may not have the desired effect, and which in larger doses develops an unfavorable action is not to be relied on in an emergency."

DEPRESSION INCREASED WITH AMOUNT GIVEN

A report is given of a study made of 62 patients, most of whom had acute infectious diseases, including pneumonia and erysipelas. None of them were addicted to the beverage use of alcohol. They were divided into four groups. Each group received a different amount of alcohol, the object being to find out whether alcohol increased the power of the heart and raised the blood pressure.

The results given below show a large proportion of depression instead of stimulation.

The amounts of alcohol used are given in the whiskey equivalent of tablespoonfuls.

Alcohol	Alcohol given	Patients showing depression
	.8—1.3 tabspnfls. whiskey	70 per cent.
"	1.3—2.6 "	77 per cent.
"	2.6—4. "	80 per cent.
"	4. —5.3 "	100 per cent.

In other words, three-fourths of the patients receiving less alcohol than would be contained in four tablespoonfuls of whiskey, showed depression instead of stimulation. In every patient receiving as much as the four tablespoonfuls of whiskey there was depression.

These results show how uncertain the effect of alcohol is, as even in small doses, it may, and in large doses invariably does depress instead of stimulating the circulation. "The border line," said Dr. Miller, "between the amount acting as a stimulant and the amount having a depressant action is variable, and this variability in action makes alcohol an undesirable therapeutic [medicinal] agent."

Scientific Temperance Journal

Founded by Mary H. Hunt

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Entered as second class matter June 1, 1909, at the postoffice at Boston, Mass., under the Act of March 3, 1879.

THE TORCH BEARER

By Arlo Bates

The Truth! Not now we fight with sword and lance,
Nor yet with eager bullet swift for prey;
Strife is not fiercest now where foes advance
In ranks embattled, in mad zeal to slay.
Thus have men fought of old, and thus while life
Is made a pawn in the great game of fate
Men may fight on; but keener is the strife
Where bloodless triumphs upon victory wait.
—Selected.

The High Price Workman

FOR many years, the development of industrial enterprises has been perfecting the efficiency of the machine. Employers are now beginning to recognize the importance of developing the efficiency of the *man*, according to definite rules. Methods are worked out by which a given piece of work can be done with the greatest economy of time and strength. Each workman is selected and trained for his special work. Mr. Frederick W. Taylor, in a series of articles on Scientific Management now running in the *American*, relates in detail experiences in developing this efficiency of the individual laborer and the results upon the men themselves as prosperous, self-respecting employees, even in occupations like shovelling, which is ordinarily classed as unskilled labor. A hint as to the type of men who can be developed into workers of the highest efficiency is given by Mr. Taylor in his description of the shovellers at the works of the Bethlehem Steel Company who became proficient workmen. "A careful inquiry into the condition of the men developed the fact that out of the 140 workmen, only two were said to be drinking men. This does not, of course, imply that many of them did not take an occasional drink. The fact is that a steady drinker would find it almost impossible to keep up with the pace that was set, so that they were practically all sober."

Thus the drinker eliminated himself from the ranks of the progressive, successful workmen, those who proved themselves the "high-priced men."

Seeking Help From Egypt

TWO illustrated articles on the consumption of intoxicants have lately appeared in the *Independent*.

One of these articles concludes with the statement that although there has been a great increase in the total consumption of intoxicants from 1840 to 1909, there is one cause for encouragement in the fact that there has been a change from the drinks containing a high percentage of alcohol to those containing a low percentage.

Too much encouragement from this should not be drawn from the conclusion. The fact is that the change from distilled to fermented drinks has brought an actual increase in the per capita consumption of *alcohol*, the common injurious element of all these drinks.

At a moderate estimate, spirits contain on the average, about 45 per cent. alcohol, wine 10 per cent., malt liquors 4 per cent. On this basis, the absolute alcohol consumed per capita has increased from 1.21 gallons in 1840 to 1.47 gallons in 1909.

Further, the decrease in alcohol consumed in spirits is infinitesimal compared with the increase of the alcohol used in fermented drinks. The per capita amount of alcohol supplied by spirits has decreased only 46 per cent.; that consumed in fermented drinks has increased 900 per cent. Thus a great increase in the use of wine and malt liquors instead of proportionately decreasing the use of spirits, superimposes on spirit drinking a growing consumption of alcohol in the form of the lighter drinks which are considered "more respectable."

The figures afford no justification for believing that we may see substantial relief from the evils of alcoholism in substituting the so-called lighter drinks. While it is true that these contain smaller amounts of alcohol, they tend to be used in larger quantities, and we get the relatively little difference or, as the figures show, a positive gain in the per capita consumption of alcohol.

Physicians in France and Germany out of the experience of those nations are warning us against thinking that beer and wine will afford any real relief from the most serious evils of alcoholism, especially in view of the now demonstrated injuries from small quantities of alcohol.

The acute results of drink in drunkenness are conspicuous, revolting. The injury done by alcohol, even in the "lighter" drinks to efficiency, health, and racial soundness is often slow and inconspicuous in development, but in the very subtlety of its working, it may be the greater peril and eventually

bring the greater national loss.

As Dr. Hugo Hoppe, of Königsberg, pointed out in his pamphlet on beer, there is likely to be slow but serious undermining of the individual's powers by the moderate use of the lighter drinks, while the results of immoderate use do not materially differ from the results of spirit using.

No Information, No Inspiration

TIMES are changing. Ten years ago relatively few persons cared for or saw the importance of the scientific facts about alcoholic drinks. Some hearers shrugged their shoulders indifferently. Some looked politely incredulous. Some were responsive.

Many signs point now to the coming of a great new popular educational temperance campaign on a scientific basis that will help do for alcoholism what the anti-tuberculosis campaign is doing to wipe out tuberculosis.

Education, information, inspiration, legislation—this is the logical order of events.

The true nature of alcohol, its practical influence on efficiency, on public health, on racial soundness, are fundamental facts by which the more obvious questions of the selling and manufacturing of alcoholic drinks will ultimately be settled.

Every local campaign against the saloon ought to be preceded, therefore, by months of quiet, systematic education of the voter in the facts, not alone as to the evils of the saloon as an institution—the trouble lies deeper than that—but as to what the alcohol that the saloon or the beer-wagon sells is and does.

A PLAN OF WORK

As a suggestion of method by which this work can be done with efficiency and economy of effort, the following plan is outlined, which may be modified or adapted to local conditions:

Organize a local committee for the express purpose of getting to every voter the facts that show the physical, mental and economic dangers in even the moderate use of alcoholic drinks.

Divide the list of voters in the community into three classes: (1) known temperance and no-license voters, (2) doubtful, (3) license voters. This enables the committee to put its heaviest work where most needed.

Divide the doubtful and license voters into groups of five or ten, or such number as can be conveniently handled.

Assign each group to a worker who shall be responsible for placing well-chosen literature containing the facts about alcohol in the hands of these voters.

Begin this work at least six months before a vote is to be taken on the question of license or no-license.

Give out but little literature at a time to each person, but give it often enough to make an impression. As no one organization has all the best literature, suitable for distribution, to simplify the securing of it the Scientific Temperance Federation has prepared packages compiled from the literature published by various houses. The packages cost \$1 each and contain 400 leaflets—package No. 1, fifty each of eight different kinds, or package No. 2, 100 each of four different kinds.

Special attention is called to the series of charts now being published in the inside cover of the JOURNAL. Reprints are ready for distribution. There is nothing better from an educational standpoint. Each carries a lesson to the eye.

Get the Women's Clubs to include in their programs some phase of the relation of alcohol to public health and especially to childhood.

Get Men's Leagues to discuss the relation of alcohol to working ability, accidents, longevity, etc.

WORKING THE PLAN OF WORK

Nothing ever happens of itself. Anything that has changed the current of human affairs has "happened" because somebody had a genuine compelling vision of what such a change would mean and proceeded to do something about it. Education of the people in the facts about alcohol will never just happen. It will come because you and I individually believe in it, get others to believe in it, unite for it and push it.

The facts are here; the people are willing to hear and read them; the need is great.

Are we interested enough to do something about it?

Arrested for Sickness

NINETY thousand five hundred persons were arrested for sickness in Massachusetts in 1909.

To be sure, that is not just the way it appeared on the police-blotter. Drunkenness was the diagnosis recorded. But the fact was that 60 out of every 100 persons arrested were haled to court because their brains and nerves had been put out of order by drink—a physical fact. They were as truly disabled as though they had broken a limb or acquired an acute disease.

What they had broken—the perfect working of brain and nerves—is vastly more important than a bone, and intoxication—poisoning by alcohol—is the manifestation of a diseased condition, alcoholism.

A city becomes wildly alarmed at 100 cases of typhoid. Twenty-five limbs broken on icy sidewalks would send a chorus of protests to the street department for not removing the ice, but the sorrowful army of “drunks” files in and out of our station houses and jails without heed, pity or protest. It will continue to do so until the people awake to the fact that the cause is not wholly the weakness of the drinker, but the nature of the drinks offered for sale on our streets; that this drink causes physical disablement, temporary or permanent, just as truly as an icy sidewalk or milk-borne disease germs.

But this is not all. At least half of all the arrests outside of these for drunkenness are due wholly or partly to alcohol. Brain cells impaired lead to lessened self-control, irritability increased, a hasty word, an ill-considered blow, arrest, conviction for crime. Again, back of it all, lies the physical fact of the injury alcohol does to the brain cells.

The amount of the whole matter is that practically eighty cents of every dollar spent by the tax-payer for police, municipal and district court expenses pays for picking up men and women whose brains and nerves have been made sick by the drink which the city permits to be sold. Then we “try” these sick people, put them under probation or “punish them” for it by fine or imprisonment. And the tax-payer pays the bill to the extent of about \$300,000,000 a year in the United States.

There are moral questions that enter into the formation and prevention of the drink habit. What we most need just now, however, is widespread education of the people to the fact that the drink habit is not primarily depravity but disease. Results of the drink habit need to be translated into terms of phy-

sical disablement with which the general public is now fairly familiar.

People should understand how the social questions of poverty, crime, degeneracy, insanity, in so far as they are traceable to alcohol at all, go straight back to its physical effects.

We need this kind of public enlightenment to get clear, logical thinking on the alcohol question.

We hear no complaints about infringement of “personal liberty” when a scarlet fever sign is placed on a house. People know that they are dealing with a disease against which society has a right to be protected.

A corporation for manufacturing fireworks lately applied for permission to dissolve the corporation because, it was said, the movement for the “sane and safe Fourth of July” had so seriously injured its business that it was not worth while continuing it. There were no pathetic appeals to save this business for the laborers thus thrown out of employment or for the employers thus injured in business, like the protests heard for the liquor business under similar circumstances.

People know the physical mischief worked by the fireworks in children's hands, and while sorry for business losses, recognize that the public safety is vastly more important.

So, with the clearer knowledge of what drink does to the individual physically, must come clearer vision of what the social results mean, clearer thinking as to what the community has a right and ought to do to free itself from these evils, a more comprehensive view of the moral measures needed for establishing the high ideals and the aids of environment which will contribute to sobriety.

All this demands a thorough, patient work of education. We have not even begun it yet as it should be done to be effective.

We are spending millions on “social tinkering,” patching up in hospital, asylum, prison and retreat, the victims of diseased conditions caused by alcohol, and all the time we are turning out new patients to be cared for tomorrow. “Millions for cure, but not one cent for prevention” seems so far to be the policy of philanthropy and the state.

For this work of education, there must be organization, system, money. If it is true, as Le Ben says in “The Training of the Public Mind” that it “requires fifty years to get an idea into the head of the crowd,” there is no time to lose. Every generation makes the task greater.

Class-Room Helps

Conducted by Edith M. Mills

Emperor William's Advice*

I WILL give you in addition, some advice upon a question which, in the interest of the nation, I have very much at heart, the question of alcohol and of drinking.

I know very well that pleasure in drinking is an old heritage of the Germans, but we must, by self-discipline, free ourselves from that evil.

I can assure you that in the course of my reign of 22 years, I have observed from experience that of the great number of crimes which have been appealed to me for decision, nine-tenths were due to alcohol.

Formerly, it used to be considered a very smart thing for youth to take and "carry" a great quantity of alcohol, and I myself, as a young officer, had occasion to see such examples, but never imitated them. Those ideas belong to the Thirty Years' War and no longer fit our times.

Without speaking of the results of drink which I do not need to describe, I wish to call your attention, especially, to one effect of intemperance which touches your future profession. As you will observe for yourselves, in the course of your service on ship-board, naval service demands a height of effort which is hardly possible to surpass. It is necessary that you be able to endure this continual heavy strain without exhaustion in order to be fresh for emergencies.

The next war and the next naval battle will demand of you sound nerves. Nerve power will decide the victory. Now, the nerves are undermined and endangered from youth up by the use of alcohol.

Later, you will have opportunity to see the target ships and the effect of modern pro-

*Speech before naval cadets, Flensburg, Nov. 21, 1910.

jectiles upon vessels, and from this you will be able to form an idea of the conditions in a battle. If you are in one, you will see frightful devastation and a multitude of things happening. Then is the time for steady nerves and a cool head. Victory will lie with the nation that uses the smallest amount of alcohol. That, gentlemen, must be your position. Then through you the troops will be shown an example, and that goes farthest with the men.

Therefore, this is what I expect from you—that here in the naval academy or on ship-board, in all comradeship and friendliness, which need not suffer in any way thereby, you watch yourselves and each other in this regard, that you do not count the use of alcohol one of your privileges.

There are in the navy in the course of formation or already formed, Good Templar Lodges and Blue Cross Societies. Many officers and some hundreds of men belong to them. I hope that you will do everything which you can to persuade the men to join. I do not need to call your attention to the example of the British navy where 20,000 officers and men already belong to these societies, to the very great benefit of the navy.

This is a matter of very great importance to our navy and to our people. If you train the troops to renounce alcohol, I shall have sound and sane subjects. This is a matter of great future importance for the men when they leave the service will carry the thought back to the whole country. If you will uphold these principles, it will uplift the people morally. I pray for your co-operation in this work.—Translated for the *Scientific Temperance Journal*.

"Nerve Power Will Decide the Victory"

FOR ADVANCED GRADES

Introduction. Let the Emperor's speech before the naval cadets serve as the point of contact. What is true of William II as a man and ruler? What general reasons may have influenced him in taking this stand? What responsibility does he place upon the cadets? What results does he hope for? (See above). Is this speech merely the arbitrary expression of opinion without foundation of facts or is it sound advice from the standpoint of expediency, science and statecraft? What reasons for an affirmative answer to the last question? Others could be quoted, among them being the fact that the *Marine Rundschau*, the

official magazine of the German Naval Information Bureau, has published articles along these lines. For instance, the third of a series of comprehensive articles by Brigade General Stephan was published in June, 1906. This article, too long to print, and containing many points already familiar, discussed the following mental operations, reviewed in detail the Heidelberg and some other experiments showing the effect of alcohol on these mental faculties, and applied the knowledge to the conditions and requirements of life on a modern battleship. As their application is so close in many lines of industrial and commercial life

where success is determined by the degree of mental efficiency and as it fits in so perfectly with the Emperor's speech, it may well be followed in developing this lesson.

The faculties discussed are:

(1) Perception; (2) Attention; (3) Association in its wider sense, Judgment; (4) Reaction Time; (5) Innervation of the muscles, particularly in its relation to strength and delicacy of action.

I. PERCEPTION

BY WHAT means do we become aware of impressions made by sounds, objects, etc., upon the senses of hearing, sight, feeling, taste, smell?

To bring out the absolute dependence of the mind upon the senses, discuss the case of Helen Keller deprived of sight and hearing only, noting that although as we know, she has a wonderful brain, yet she could scarcely develop mentally at all until a means was found to supply to some extent the knowledge these senses should have furnished her.

To show how dependent is the brain for accurate knowledge upon the joint action of the senses, make some simple experiments in class, using objects strange to those experimented upon. For example, let one pupil determine what a bit of onion is by taste alone, and another determine whether a red or a green signal is shown, he being blind-folded, etc.

Whirl a small drum or even a card, upon which figures or letters are printed and show that the brain and eye cannot perceive sensations which pass too rapidly and bring out the point that when fatigued, sensations are less easily perceived. The effects of alcohol on the nervous system are similar to those of fatigue.

Dr. Stephan shows that many tests have proved that sense impressions such as those from sight, hearing, etc., are weakened by the amount of alcohol in two or three glasses of beer. Reading tests very similar to this one of the drum carried out with the greatest precision show that after taking this amount of alcohol, words or syllables were omitted or given incorrectly; the ability to perceive quickly and to retain sense impressions were lessened. Moreover, when an amount of alcohol equal to two and one-half to three glasses of beer was taken in the evening, its impairing effect on perception could be observed in the morning and the ability to memorize was reduced as much as 40 per cent.

II. ATTENTION

SHOW that attention is the power of the mind to grasp and hold for consideration, impressions gained through the senses. In addition, by a series of simple experiments, bring out the following:

Attention, (1) value of; (2) means by which secured; (3) how hindered; (4) how affected by alcohol.

(1) Direct the pupils to study a page of matter for a one-minute period, meanwhile looking about, thinking of a ball game, etc., as much as desired. How much of the lesson is retained? Assign another smaller portion for intensive study for a minute. Compare. Recall feats of Indian scouts, naturalists, etc., due largely to close attention to everything passing under the notice.

(2) By similar experiments, show that attention is secured through (a) interest, and (b) by use of the will in holding the mind to its task. Emphasize the need of choosing worthy things upon which to place the attention; the fact that attention, like muscle, can be strengthened by suitable practice; and the great value of such practice to the will and, so to self-control. How is it true, "that the thing we attend to is the thing we attain to?"

(3) Show that noise and other distractions and fatigue impair the power of attention. What reasons for orderly manners in the school room? What effect upon attention to orders, etc., would the firing in a battle produce? The distractions in various kinds of business? What does William II say is necessary in the former case? Is it true elsewhere?

(4) Recall that one of the effects of alcohol is similar to fatigue. What is the well understood effect of alcohol on the will and the power of self-control? Note also the experiments of Superintendent Joss and of Rudin, showing that alcohol impaired the power of attention according to the amount of alcohol used.

II. POWER OF ASSOCIATION

MENTION some familiar naval battle as that of Manila Bay. Question class as to the thoughts it brings to mind. Show how valuable is this faculty which enables us to marshal a wide range of facts to the aid of a single idea. Speak of memory in this connection. Show pictures of brain cells from the gray matter, explaining the manner in which these fibres are supposed to perform this wonderful work. Show picture or draw diagram illustrating damage to these fibres by the use of alcohol. What happens if a telephone line gets down? Compare to these broken-down conditions.

Bring out clearly, the relation of association to judgment, noting that accurate judgment and hence suitable action, depends largely on this faculty. Success or failure in every department of life must depend upon sound cells or damaged ones and alcohol has only one effect, to break down.

Kurtz and Kraepelin, carrying on experiments for a number of successive days, part with alcohol and part without, announced as

the result: "On the whole it is obvious that on the non-alcoholic days the associations are more rational, specific, penetrating, manifesting closer observation; on the alcohol days, on the other hand, they were more confused, foggy, sentimental and general. The promptness of the association is greater on the non-alcoholic days."

IV. REACTION TIME

HOW long does it take for the runner to start after he hears the crack of the starter's pistol? For the batter to strike the ball after he sees it leave the pitcher's hands? What effect on every one

of the nine as the batter strikes? What difference between the first instance where only one kind of an action is to follow the signal and the others where every boy interested has to decide after noting the signal what action he will take? Which is more important *simple* (like the first) or *choice* (second) reaction time?

Suppose an important game of ball. Other things being equal, which nine would carry off the trophy if in one nine the pitcher and the catcher always had to delay the response to the signal one-third longer than the normal? Alcohol lengthens both simple and choice reaction time. Discuss the effects of drink on business, as that of engineer, etc.

How the Grapes Came to do Harm

ONE day little brown-eyed Carina Ferro came to school feeling not a bit like herself. Her eyes were so heavy and her head so dizzy that she could not half see the pretty pictures in her book or understand what Miss Prescott was explaining to the children.

"What is the matter, dear?" said the teacher, noticing how ill she looked.

"I don't know," said Carina. "I feel so sleepy, I can't get my lesson."

Miss Prescott asked if she sat up late the night before for she knew that makes children feel stupid the next day. But Carina went to bed early as little children ought.

"Has my little girl been eating a good deal of cake or candy?" she said. No, Carina had not had cakes and candy.

But the teacher knew that wrong things to eat or drink make children sick oftener than anything else, so she asked Carina to tell just what she had eaten for lunch.

"I had some bread and some of father's wine," said the little girl. "Sometimes we have grapes with bread; I like them better."

"Ah," thought the teacher, "now I can guess what made the trouble. Tomorrow I must teach all the children the difference between grapes and wine."

She let Carina go home, and the next day they had a lovely lesson with purple grapes and grape juice, and they wrote little stories about grapes and colored pictures of them.

Miss Prescott sent a kind little note to Carina's mamma explaining things and after that Carina was not sick and stupid again.

I. THE RIGHT WAY TO USE GRAPES.

READ or tell the little story of Carina and tell the children that they can have a lesson like the one in Carina's school. Show the grapes, or, the pictures and recall the appearance. What different kinds? Where do they come from? How are they

grown? Show pictures of vineyards. What are some of the uses of grapes? Show the jelly or marmalade and the grape juice. Give each pupil in his own cup a little drink of the grape juice (which can be somewhat diluted to make it go further), directing each to taste it carefully. What flavors are there? (Some note the sweet, some the acid, and some the grape flavor). Is there sugar in other fruit juices? Is there acid, that is, something like vinegar or lemon juice? Does each fruit have its own flavor as well? Explain that the sugar in fruit is a particularly good kind, and that the acid is also especially useful to keep the body healthy.

Emphasize the value of fruit of all kinds, but warn against that which is either unripe or over-ripe. Grapes and grape juice are also excellent for the sick. They are delicious and wholesome.

There is another way in which grapes can be treated so as to make them nourishing and wholesome. Who can tell what it is? (Show bunch of raisins and the dried currants.) Explain very briefly how they are cured. How do we often use them? Point out that it is better for children to eat them when cooked than uncooked. Show that as they are highly nutritious food, only a very few should be eaten at a time and then they must be very thoroughly chewed. Fresh grapes or fresh grape juice or raisins taken in proper amounts would make one feel well and help her to grow strong, and to grow pretty too, because the acids are good for the complexion. They are like apples and other fruits that way. Instead of making one's head ache, they would help keep headaches away.

II. THE WRONG WAY TO USE GRAPES

WHO remembers what Carina had for lunch that made her feel so miserable? Surely the bread could not have made her sick? What was it? Who



knows what wine is made from? What do you suppose could have happened to the delicious, healthful grape juice to make it just turn right around and make her sick instead of keeping her well?

I will tell you. Carina's father and mother came over from beautiful, sunny Italy where, as we saw, there are many vineyards. They loved the beautiful grapes, red, purple or yellow, and often crushed their juices out for a beverage. When they came to America so that Carina could have a better home and good schools, they still wanted them. So in the summer they bought a lot of grapes and pressed out the juice. They made a little barrel full of it so they could have grape juice for a long time.

But they never heard of the little thieves floating round in the air or resting on the grapes which love to steal the sugar in grape juice and leave a poison in its place, and so they took no pains to keep them out of the barrel.

Here is a picture of them. (Show picture of yeast plants in text-book or the one on p. 60, Dec. *Journal*.) They were far tinier than the pictures. No one can see them without a magnifying-glass. See the little buds on the sides; those are their baby plants which come very fast. Soon there were whole armies of the tiny robbers, and they changed the grape juice until, after a time, it was no longer sweet and delicious, but was sourish. If Mrs. Ferreo had tried to make jelly she would have failed. Really the grape juice was spoiled. It had bubbles in it, and had a stinging taste that came from the poison the yeast plants left in it. We call this poison alcohol. It wasn't real grape juice any longer but wine. Carina's parents did not realize what really had happened and so they gave it to her to drink.

Now alcohol is not so strong as many poisons, but even the little there was in the wine went to Carina's head and made it ache and hindered her from learning her lessons. That is the trouble with drinks that have alcohol in them—cider and beer have it too—they nearly always hurt one's head and may make one sick in other ways. The more one uses, the more harm is done. Often when people use such drinks for some time they grow so fond of them they cannot stop at all, although they are sadly poisoned.

When Mrs. Ferreo received Miss Prescott's friendly note telling her how sorry she was that little Carina was too ill to stay at school and that she thought it was the wine that made her sick, she decided that Carina should always have milk with her bread at lunch.

Afterward Miss Prescott told Mrs. Ferreo

just how to boil fresh grape juice to kill the little robber yeast plants and then put it in tightly-corked bottles so no more could get in. That is how our grape juice was kept so sweet and wholesome. It would stay that way for years.

Now we will write the lesson story on the blackboard and you may copy it. Leave a wide margin so that when it is done you can cut out and paste on the pictures of the grapes; you may color them, too, during the drawing period.

(For the Blackboard.)

Grapes and grape juice are very good to keep us well.

Jelly and raisins and currants are made from grapes. They are good for food.

If we do not take care of grape juice it will spoil. It changes into wine.

The yeast plants make alcohol in the wine.

Wine is apt to go to one's head or make one sick.

It is not safe to drink wine or any drinks that contain alcohol.

"Apples, red apples, we'll pick from the trees
But cider,—no cider for us of you please.
Grapes, purple grapes for your eating and mine,
But we'll turn down our glasses
Where pours the red wine."

Lesson Points: 1. The value of grapes and the good use of them. II. The harm from the bad use of them.

Be sure to make clear to the children what many grown people do not yet know, that although no alcohol is put into the grape juice, it will come there through the action of the yeast plants. In some places, Italians do make wine in just the manner mentioned.

Be careful to leave a right idea regarding poisons. It is the nature of alcohol to harm the health, so it is a poison though it is not so quick or strong as Paris green or some others. But it is more dangerous (1) because people are not so much afraid of it and use it, and (2) because it can create an uncontrollable craving for itself.

If occasion requires, explain what many people do not yet understand fully, how harmful drinks containing alcohol are, and in all countries some of the wisest and best people are teaching their countrymen and urging them to stop all use of the alcoholic drinks.

Material: A bottle of grape juice (probably the grocer or the manufacturers would donate a sample bottle for the purpose), a jar of grape jelly or marmalade, a bunch of raisins on the stem, some dried currants, (which are small grapes) and pictures of vineyards. Also provide or have the children bring a sufficient number of pictures of grapes for each member of the class. The advertisements of certain brands of grape juice and of baking powder are to be found in many of the popular magazines so a supply can easily be obtained.

Suggestions: For busy work let the children cut out the pictures of the grapes from the advertisements, paste them neatly on a good-sized sheet of paper and color them, the lesson story (see "blackboard") being written in the center or underneath; or, the children may draw bunches of grapes or leaves, and cut them out. The lesson story may be written on a large "leaf."

In language the children may reproduce the story of Carina and add to it one or two statements to the effect that it was the wine that made her stupid and sick and wine contains alcohol, which is harmful to grown people as well as to children.

Let them look up Italy on the map and find the countries which export raisins and currants.

A 62-Mile Walking Match

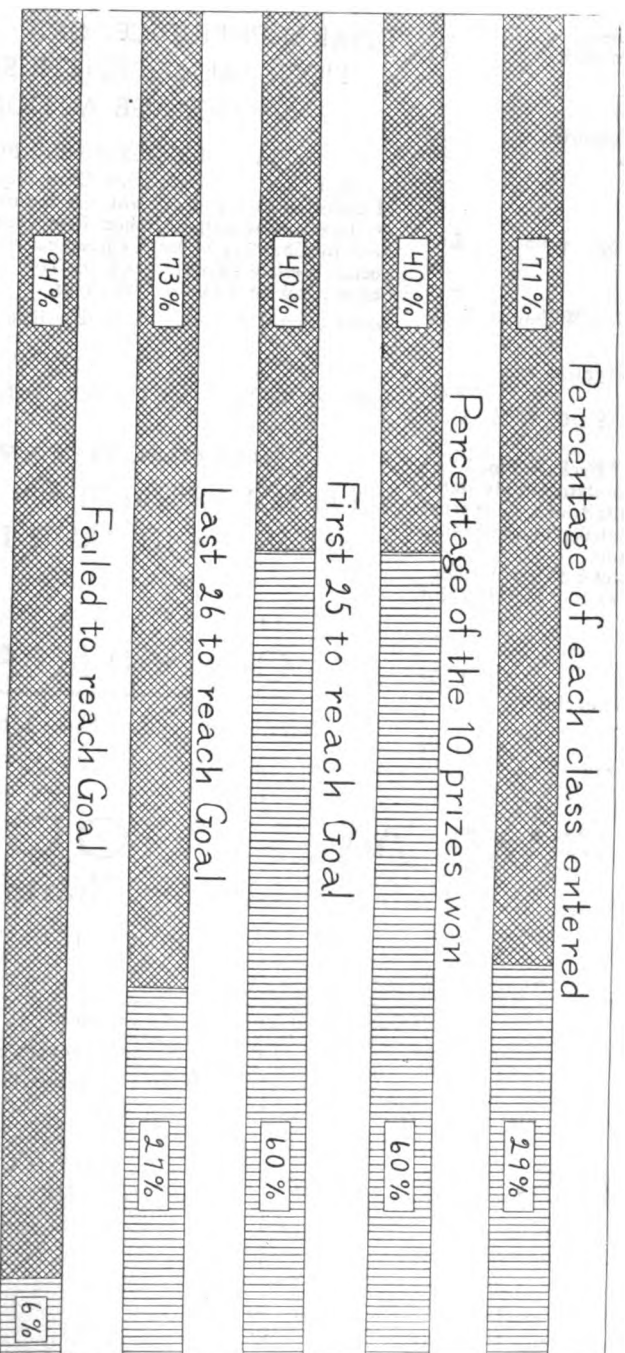
... BETWEEN ...

Abstainers and Moderate Drinkers

Match held at Kiel, Germany, 1908.

Moderate Drinkers (59) represented by diagonal lines.

Abstainers (24) represented by vertical lines.



Copyright 1910, by
Scientific Temperance
Federation, Boston.

Abstainers won 1st, 2nd, 3rd, 4th, 8th and 9th places. Moderates won 5th, 6th, 7th and 10th places. Two of these "moderates" had lived abstinent for months before the contest. "Importance of the victory less in abstainers winning than that a majority of drinkers fell out."

Scientific Temperance Literature

	per 100
Facts Concerning Alcohol	.15
Drink and the Doctor's Bill	.15
Sinning Against the Unborn	.15
The Causes of Alcoholism	.15
Alcohol and the Death-Rate	.15
Alcoholism and Tuberculosis	.35
Effects of Alcohol on School Children	.35
Alcohol and Degeneration (colored chart)	.65

Beer and Wine Leaflets	
Alcoholism in Wine-growing Countries	.30
Wine to Drive out Drunkenness	.30
Wine a Peril to Childhood	.30
False Claims for Wine	.35
Plain Facts About Beer	.40
Dangers in the Use of Beer (20 pp.)	\$.05 2.50
Sample Package	.20

Alcohol and the Individual (Dr. H. S. Williams)	\$.05 each
London Congress Report	.10
International Course of Study in Hygiene and Temperance	.05

"Teacher's Helps" Packages \$.10; \$.15; \$.25

"Distribution Packages"
400 leaflets \$1.00. Order as "Package No. 1" or "Package No. 2." Each contains simply stated practical facts about alcoholic drinks. Just what you want to create really intelligent temperance sentiment in your community.

Package No. 1, 50 leaflets each of 8 different kinds.
Package No. 2, 100 leaflets each of four different kinds.

Anti-Tobacco Literature	each
Power of Tobacco Habit	\$.20
Why the Cigaret is Especially Harmful	.20
Use of Tobacco	.15
Boy and the Cigaret	.05
Avoiding a Dangerous Blind Lead (18 pp.)	.05
(Best all-round Anti-Cig.-No. Journal.)	

The Temperance Problem

Presented from the standpoint of

HEALTH, ECONOMICS, CIVICS

in a manner to

DISARM PREJUDICE, GRIP ATTENTION, CREATE ENTHUSIASM, ENCOURAGE ACTION

SPECIALLY DESIRABLE FOR

Labor Unions, Lyceums and Chautauquas, Societies of Christian Endeavor, Parental or Industrial Schools, No-License Campaigns, Public Temperance Meetings held in Churches or by Temperance Organizations, Social Welfare Workers and for High and Normal Schools and for Teachers' Meetings.

Trained Lecturers Available Lectures Illustrated if Desired

Send for full Particulars and Terms

SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull St., Boston

SPECIAL OFFER

SET OF SLIDES SUFFICIENT FOR ILLUSTRATED SCIENTIFIC TEMPERANCE LECTURE

Half the Slides Colored

Complete with Copyrighted M. S.

Only \$20 for All

Cigaret Stereopticon Slides for Sale

SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull St., Boston

A NEW METHOD Travelling Loan Exhibit of Graphic Charts

WHAT IS IT?

Exhibit consists of 25 Colored Charts (framed or not as desired, size 22x28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other Infectious Diseases, Longevity, etc. No objectionable details. Based on most reliable scientific experiments. Excellent for No-License Campaigns.

Send for Full Information as to Expense and Plan for Use.

WHO USE IT?

General Expositions
Teachers' Institutes
Charitable Organizations
Christian Endeavor Conventions
Sunday School Associations
Temperance Lecturers and Conventions
Physicians, Ministers
200,000 persons have seen these charts in two years.

NEW CHART SERIES

WHAT YOU HAVE BEEN ASKING FOR

Inexpensive reproduction of the large charts. Use them in Day and Sunday Schools. Set people thinking by displaying them in Shop Windows, Manufactories, Stores, on Bill Boards, etc.

Four of the series now ready, others to follow.

- No. 1—"Comparative Sickness of Drinkers and Abstainers" (see Dec. Journal.)
- No. 2—"Employers Who Prefer Non-Alcoholized Workmen" (see Jan. Journal.)
- No. 3—"Tuberculosis and Nervous Diseases in the Children of Drinkers" (see Feb. Journal.)
- No. 4—"A 62-Mile Walking Match Between Abstainers and Moderate Drinkers" (see March Journal.)

Handsomely printed in red on coated paper; size 9x13 in.

Each, \$.05

Trial Order (3), only \$.10

Per Dozen, \$.25

SCIENTIFIC TEMPERANCE JOURNAL, - - 23 Trull Street, Boston, Mass.

ANTI-NARCOTIC NUMBER

SCIENTIFIC TEMPERANCE JOURNAL

— *Continuing the* —
SCHOOL PHYSIOLOGY JOURNAL



Cut used by courtesy
of the Massachusetts
No-License League.

The Children's Song

LAND of our Birth, we pledge to thee
Our love and toil in the years to be,
When we are grown and take our place,
As men and women with our race.

Father in Heaven who lovest all,
Oh help thy children when they call;
That they may build from age to age,
An undefiled heritage!

Teach us to rule ourselves alway,
Controlled and cleanly night and day;
That we may bring, if need arise,
No maimed and useless sacrifice.

Land of our Birth, our Faith, our Pride,
For whose dear sake our fathers died;
O Motherland, we pledge to thee,
Head, heart and hand through the years to be!

—Kipling in "Puck of Pook's Hill."

Published at—
BOSTON, MASS.

APRIL, 1911

New Century Series

—OF—

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fulness and accuracy of the treatment in regard to the nature and effects of alcoholic drinks and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

Total Abstainers

Through Classification

may receive equity in premium cost with an old line, legal reserve life insurance company

**It will obligate you only
the cost of a Postage
Stamp to know about it**

Our low premium Perfection Endowment and Monthly Income policies protect every contingency.

**Write to-day—give your age
Do you want a position ?**

We want to increase our agency force. Write now. Address

TOTAL ABSTINENCE DEPARTMENT

Security Mutal Life Insurance Co.

Binghamton, N. Y.

Scientific Temperance Literature

	per 100	each
Facts Concerning Alcohol	.15	Alcohol and the Individual (Dr. H. S. Williams) \$.05
Drink and the Doctor's Bill	.15	London Congress Report .10
Stunning Against the Unborn	.15	International Course of Study in Hygiene and Temperance (per doz., \$.50) .05
The Causes of Alcoholism	.15	"Teacher's Helps" Packages \$.10; \$.15; \$.25
Alcohol and the Death-Rate	.15	"Distribution Packages"
Alcoholism and Tuberculosis	.35	400 leaflets \$1.00. Order as "Package No. 1" or
Effects of Alcohol on School Children	.35	"Package No. 2." Each contains simply stated
Alcohol and Degeneration (colored chart)	.65	practical facts about alcoholic drinks. Just what
Alcoholism in Wine-growing Countries	.30	you want to create really intelligent temperance
Wine to Drive out Drunkenness	.30	sentiment in your community.
Wine a Peril to Childhood	.30	Package No. 1, 50 leaflets each of 8 different kinds.
False Claims for Wine	.35	Package No. 2, 100 leaflets each of four different
Plain Facts About Beer	.40	kinds.
Dangers in the Use of Beer (20 pp.) \$.05	2.50	

A NEW METHOD--Travelling Loan Exhibit of Graphic Charts

Exhibit consists of 25 Colored Charts (framed or not as desired, size 22x28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other Infectious Diseases, Longevity, etc. No objectionable

Send for Full Information as to Expense and Plan for Use.

details. Based on most reliable scientific experiments. Excellent for No-License Campaigns and for General Expositions, Teachers' Institutes, Charitable Organizations, C. E. Conventions, S. S. Associations, Temperance Lectures.

NEW CHART SERIES

WHAT YOU HAVE BEEN ASKING FOR

Inexpensive reproduction of the large charts. Use them in Day and Sunday Schools. Set people thinking by displaying them in Shop Windows, Manufactories, Stores, on Bill Boards, etc.

Five of the series now ready, others to follow.

- No. 1—"Comparative Sickness of Drinkers and Abstainers" (see Dec. *Journal*.)
- No. 2—"Employers Who Prefer Non-Alcoholized Workmen" (see Jan. *Journal*.)
- No. 3—"Tuberculosis and Nervous Diseases in the Children of Drinkers" (see Feb. *Journal*.)
- No. 4—"A 62-Mile Walking Match Between Abstainers and Moderate Drinkers" (see March *Journal*.)
- No. 5—"Smoking as a Handicap" (see April *Journal*.)

Handsomely printed in red on coated paper; size 9x13 in.

Each, \$.05

Trial Order (5), only \$.15

Per Dozen, \$.25

SCIENTIFIC TEMPERANCE JOURNAL,

- - 23 Trull Street, Boston, Mass.

Scientific Temperance Journal

Vol. XX

BOSTON, APRIL, 1911

No. 8

The Children's Right: The Nation's Salvation

THE children are the legal heirs to every truth of science that warns against the use of alcohol and other narcotic poisons. To deprive them of these truths is an unspeakable sin, not only against the children, but also against the nation soon to be governed by them.—*Mary H. Hunt.*

Smoking as a Handicap to College Students

By CORA FRANCES STODDARD

Based upon a report (*Popular Science Monthly*, Aug. 1910) on 223 Freshmen and Sophomores of Columbia University by Dr. George L. Meylan, Columbia University

THE question of the effects of tobacco upon the smoker has received much attention from moralists, educators, physicians and scientists. This study was directed to determine if smoking exerts any influence on the physical and mental characteristics of college students. 223 men were recorded. Of these 52 per cent. were smokers, 48 per cent., non-smokers.

AGE AT WHICH SMOKING BEGAN

FOR PARENT and teacher the age at which the boy begins to smoke is of importance. Ninety-five per cent. of these college smokers acquired the habit between fourteen and nineteen years of age. Four per cent. began before the age of fourteen, but at the beginning of adolescence there is a prompt increase which continues to rise reaching the highest point at the seventeenth year, in which more than one-fourth of these young smokers contracted the habit.

PHYSICAL CONDITIONS

IN THE physical measurements and tests of smokers and non-smokers there was very little difference, owing in part to the fact that the smokers averaged about seven and one-half months older than the non-smokers. This fact, however, does not prove that the use of tobacco by youth may not interfere with growth. Indeed, Dr. Meylan says: "All scientists who have studied the physiological effects of tobacco are agreed that it has a depressing influence on the heart and circulation, also, that anything which interferes with the vigor of the circulation has a retarding effect on growth."

The period of greatest activity in growth is from the thirteenth to the sixteenth year, and more than sixty per cent. of these college men had not begun to smoke until after

the sixteenth year, which may be one reason why they showed no marked physical inferiority.

Dr. Meylan's report shows, moreover, that the smokers as a rule belong to a class of students having larger means, and therefore a more favorable physical environment, better nutrition, etc., than the non-smokers; their measurements should be larger on that account. As President Butler of Columbia points out in his annual report for 1908-9, quoted by Dr. Meylan, there is today "a new type of college student who goes to college primarily for a social, not for an intellectual purpose. His wish is to share in the attractive associations; he desires to participate in athletic sports; he hopes in after life to mingle freely and on terms of equality with college-bred men."

"This type of student," says Dr. Meylan, "is a good fellow, he dresses well, has a generous allowance, belongs to a fraternity and tries to 'make' some varsity team... He spends much time in social intercourse and athletics and gets few high marks, mainly because he does not try to get them. He smokes because he has the time, the money and the opportunities to indulge in the practice."

Since the smokers participate in athletic exercises more than the non-smokers, "their physical measurements should be larger on that account."

But in spite of the fact that the smokers had conditions more favorable to a strong physique, they showed little if any superiority over the non-smokers. "That they are not appreciably heavier, taller and stronger than the non-smokers may be due to the depressing influence of nicotine on the circulation and consequent interference with normal growth."

COLLEGE SMOKING NOT A SAFE EXAMPLE TO IMITATE

THE BOY who begins the use of tobacco in his teens because he thinks it manly and because he sees his brother use it, as he supposes without harm, ought to be early taught that the facts show that even the college man, more mature than the boy, suffers injury, especially at the point which is supposed to be the main reason for going to college—his scholarship; that this injury comes not only through the smoking itself, but as Dr. Meylan shows, through the "idleness that is closely associated with the use of tobacco."

As for the present danger to the boy himself, "all scientists," says Dr. Meylan, "are agreed that the use of tobacco by adolescents is injurious; parents, teachers and physicians should strive earnestly to warn youths against its use."

POORER SCHOLARSHIP AMONG SMOKERS

DR. MEYLAN'S study of Columbia students like that of Mr. Clarke, of Clark College, showed that the smokers had distinctly poorer scholarship.

SCHOLARSHIP RECORDS OF THE 223 STUDENTS			
Classification of Students	Average marks at entrance	Marks during first 2 yrs.	Failures during first 2 yrs.
223 students	90 per cent.	66 per cent.	7 per cent.
115 smokers	89 " "	62 " "	10 " "
108 non-smokers	91 " "	69 " "	4 " "

The fact that the smokers were about eight months older than non-smokers when they entered college would seem to indicate that it had taken them longer to accomplish a given amount of school work than the non-smokers. As "age seventeen is the time when most boys begin to smoke, if for any reason a boy is older than the average when he enters college, there is more than an even chance that he will have acquired the smoking habit in the secondary school. The type of student who is primarily interested in social life and athletics is found in secondary schools as well as in college; three out of four of

such students smoke, and they are usually graded low in their studies."

SMOKING MIXED WITH OTHER CAUSES IN LOWERING SCHOLARSHIP

MR. CLARKE, in closing his report on smoking among Clark students pointed out the fact that this habit is mixed with others tending to lower scholarship in which "smoking is a vital part of the difficulty. The club room is a lounging place where smokers are tolerated. A man who dislikes tobacco is seldom seen there. He is, therefore, under little temptation to waste time. Hence the smoker is the one who wastes the most time around the college grounds. This is but one of the conspicuous examples leading to the conclusion that smoking is an indicator of other evils as well as being harmful in itself."

Dr. Meylan carried his studies farther, into the rank in scholarship of men conspicuous in athletics and members of fraternities. Of the smokers 42.6 per cent. were members of fraternities; of the non-smokers 15.7 per cent.

The following table shows a close relation between smoking and membership in college fraternities:

STUDENTS WHO BELONG TO COLLEGE FRATERNITIES.	
Of 223 students	66 or 29.4 per cent.
Of 115 smokers	49 or 42.6 per cent.
Of 108 non-smokers	17 or 15.7 per cent.

Other tables show that there were more smokers among athletes and a great many more among fraternity men than among all students.

"Smokers, athletes and fraternity men [on the average] have lower scholarship records than other students."

Tobacco Favors Tuberculosis

THE HENRY PHIPPS INSTITUTE for the treatment of tuberculosis reports that tobacco users make very unfavorable progress as compared with those who do not use it. In 1907, 15.58 per cent. of those who used tobacco died as compared with only 5.15 per cent. of those who did not use it; 45.36 per cent. of those who did not use it improved, but only 37.54 per cent. of those who used it.

"The preponderance of favorable results for those who did not use tobacco" says the

report, "is not quite as large as the preponderance of favorable results for non-alcoholics, but it is also pretty large.

"The damaging influence of tobacco in tuberculosis," the report continues, "is probably exercised through the circulation. Tobacco undoubtedly depresses the heart and interferes to some extent with vigorous circulation. It is generally conceded that anything which depresses the circulation interferes with nutrition and consequently predisposes to tuberculosis, both in implantation and development."

A Page from the Book-keeping of Humanity

BY REV. U. F. MUELLER, C. PP. S.

THERE died in the decade 1900-1909 nearly 14,000,000 persons within the confines of the United States. Of these 55,000 died of alcoholism.

This term, according to the express statement of the census office, "does not include deaths from alcoholic cirrhosis of the liver, general alcoholic paralysis or certain organic diseases due to the use of alcohol." The latter two can not be separated from other cases. But cirrhosis caused the death of about 125,000 other victims. Most of these deaths, at least between ages 24-64 (and they numbered 95,000, the great majority), are due to the use of alcoholic beverages.

150,000 persons, therefore, may be said to have died, within ten years, of these two forms alone of acute and chronic alcoholism.

Of the 14,000,000 general deaths, 8,400,000 were either children and young people below 24, or persons above 64 years of age. Of the remaining 6.4 millions between 24 and 64 years of age, 3,000,000 were men and 2,600,000 were women.

DEATHS DUE TO ALCOHOL-CAUSED DISEASES

Of the 3,000,000 deaths of men, about 60,000 were due to cirrhosis and 47,000 to alcoholism. 31,000 women out of 2,600,000 died of cirrhosis and 7,200 of alcoholism.

In other words, approximately* *one death in every 30 among men was due to one of the worst forms of alcoholism. One in every 70 women between 24-64 years of age died of a like cause.*

But the data of the following study are derived from the United States mortality census, comprising for 1900-1904 the six New England states and New York, New Jersey, Michigan and Indiana and 74 cities in the other states, thus including over 30,000,000 of people or 40 per cent. of all the population of the United States.

In the 1905-1908 report, which was also used, California, Colorado, Maryland, Pennsylvania, South Dakota and Wisconsin have been added thus comprising 45,000,000 or 50 per cent. of the population.

The mortality statistics are, therefore, fairly representative.

DEATHS FROM ALCOHOL IN THE PRIME OF LIFE

We may next inquire at what ages the victims of alcoholism sink to their graves.

From 1900-1904, cirrhosis and alcoholism claimed of every 1,000 deaths:

*These results are derived by computation and hence rather approximate than exact.

At 24-34 years	15 deaths
" 35-44 "	30 "
" 45-64 "	26 "
" 64 and over	10.2 "

That is to say, the majority of the victims fall in the prime of manhood and womanhood. The figures show that the heaviest results of drinking in these diseases reach their maximum at 40-50 years of age; the maximum being reached by men somewhat earlier than by women. Since women as a rule do not use as much of the stronger drinks as men, their entire death-rate from the use of liquor is about one-half that of the men.

COMPARISON WITH OTHER DREADED DISEASE

Even this, however, does not give full conception of the awful slaughter due to these worst forms of alcoholism. Some idea of this may be gained by grouping the deaths in the registration area (1900-4) from alcoholism and cirrhosis with a few other well known dreaded causes of death among persons 24-64 years of age.

MEN		
Apoplexy		29,000
Cancer		25,000
ALCOHOLISM & CIRRHOSIS		18,860
Typhoid		15,800
Appendicitis	4,400	13,730
Dysentery	1,850	
Diarrhoea & Enteritis	5,700	
Smallpox	1,780	
WOMEN		
Childbirth		15,800
Typhoid		10,000
Appendicitis	3,100	10,150
Dysentery	1,950	
Diarrhoea & Enteritis	5,100	
ALCOHOL & CIRRHOSIS		6,610
Smallpox		1,070

OCCUPATIONS AND THE ALCOHOLIC DEATH RATE

The death-rate from alcoholism and cirrhosis in the various occupations is also of importance.

The census office furnishes data on this point only for the year 1908. But this, fortunately, was the year of the decade 1900-9 when the alcoholism death-rate was lowest, and therefore may be called fairly representative, especially if we link with alcoholism the death-rate from cirrhosis which is a slower-working result of drink and which in that

year had a death-rate rather higher than the average.

The total death-rate per 100 in the various occupations from these two alcoholic diseases may be classified as follows, the occupations being named in the order of increasing death-rate:

Less than 2 alcoholic deaths per 100: clergymen (1.3) railroad employees, civil engineers, hucksters, sailors (not U. S.), farmers, teachers, janitors, (1.9).

Less than 3 alcoholic deaths per 100: machinists (2), physicians, miners, lumbermen, stone cutters, iron and steel workers, gardeners, tailors, lawyers, bookkeepers, blacksmiths (2.9).

Less than 4 alcoholic deaths per 100: engineers [not locomotive] (3.00), plasterers, architects, artists, merchants, agents and collectors, hack-drivers and draymen, bankers, painters, traveling men, cigar-makers, masons, plumbers, printers and pressmen, servants, glass-blowers (3.9).

Less than 5 alcoholic deaths per 100: barbers (4.1), pharmacists and apothecaries, soldiers and sailors (U. S.), musicians, teachers of music, livery stable workers, journalists, butchers, bakers (5.00).

The alcoholic death-rate of brewers and distillers was 5.1 per 100; of hotel and boarding house keepers 8.8, while saloon keepers and bar-tenders had the highest rate of all, 11.1 per 100.

Note that this means that the death-rate from these diseases was highest in the occupations where the handling of drink afforded the greatest opportunity for using it, and that 1 out of every 9 deaths of saloon men was due to one of these two alcohol-caused diseases.

This is not a lovely picture of the cost of alcoholism in human life, especially if we keep in mind the fact that it represents the deaths from only the worst forms of alcoholism, and does not represent at all the thousands of deaths from other diseases of which alcohol is one cause.

I REGARD the cigaret as a fuse of infernal fire tending to explode the worst passions of the body. In dealing with more than sixteen thousand delinquent children of this city during the last eight years, I find as a rule, the user of cigarets is a stunt, a weakling, in body, mind and morals.—ZED H. COPP, *Chief Probation Officer, Juvenile Court, Washington, D. C.*

BIBLE WINES

The National Temperance Society, New York, is now able to furnish for only \$.35 (paper) this new book by Fenton Ferrar, with modern translations of all Biblical passages referring to wine and its use.

The Socurcge of Cancer

BY IRVING WILSON VOORHEES, M. S., M. D.
Vanderbilt Clinic, New York.

IN CANCER of the lips and tongue, the frequency of which in the male has always provoked great interest, the irritative action of tobacco and decayed teeth (dental caries) influence its origin. One surgeon has collected seventy-seven cases of cancer of the lip, in which he has always found these two antecedent agents. Of four women affected with cancer of the lip, three were addicted to smoking. Another author has established statistics of 245 cases of cancer of the tongue, the histories of which show the never-failing presence of these two agents....

Cancer of the mouth begins as some little sore that does not readily heal up, or heals up only to break down again in a few days. Now if this sore is opposite the root of an old tooth, or if it is on the lip, where the pipe or cigar subjects it to constant irritation, this fact is exceedingly suggestive of cancer, and you should not be satisfied with anything short of the best medical opinion that can be had....

In the light of our present knowledge, one may conclude that cancer is relatively preventable if all sources of body irritation are removed just so soon as they appear, such as decayed teeth, the use of the pipe, or cigar, [injuries], etc., and if the general health is kept at par or above.—THE INDEPENDENT, (Mar. 23, 1911.)

Smoking Induces Premature Puberty

BY BRIG.-GEN. A. A. WOODHULL, M. D.,
L. L. D.

WRITERS of authority say: "It [cigaret smoking by boys] is said to induce premature puberty"; by its depressing and disturbing effects on the nerve-centers it creates sexual propensities and leads to secret practices, while permanently impairing virile powers."

Premature puberty means that the great special ganglia and the reproductive secreting organs have been called into action before nature is prepared for their operation. In this case it would arise from the incoordination of those centers through the disturbing influence of the nicotine.

Not improbably, *mutatis mutandis*, tobacco creates a like influence in both sexes, but girls have no such opportunities for excess as boys. Certainly small boys who have embraced the cigaret habit are liable to be degenerates as well.—*American Health*.

The College Records of Ten Smokers and Ten Non-Smokers

BY CORA FRANCES STODDARD

TEN young men entered Clark College in the classes of 1907-10 who began to smoke after they came to college. In a study made of the effects of smoking on the men of that college (*Clark College Record*, July, 1909) these ten men were compared with ten other men who never smoked. The latter were chosen alphabetically from the class rolls. An interesting story unfolded itself which is represented in the accompanying diagram.

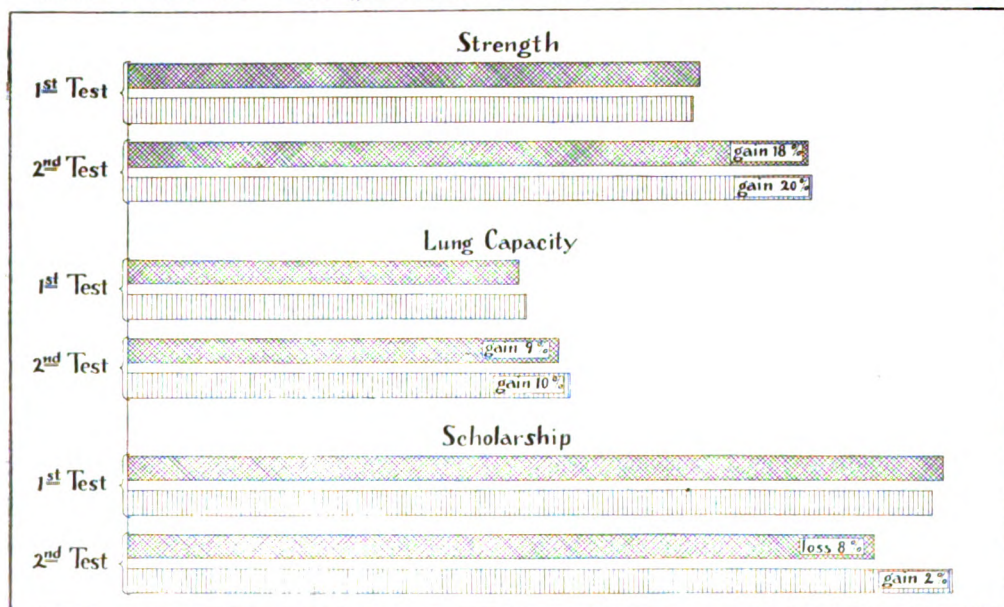
THE NEW SMOKERS FALL BEHIND NON-SMOKERS IN STRENGTH

TWO SETS of physical tests at an interval of time were made of their physical condition. When the first test of strength was made,

ond test, they were even more ahead. Between the two tests, the ten smokers with their eight "athletes" gained nine per cent. in lung capacity; the ten non-smokers with their four athletes gained ten per cent.

WHERE THE SMOKERS LOST GROUND

WHEN these ten young men who became smokers had entered college, they had a better rank in scholarship than the ten non-smokers. But the final records showed that the *non-smokers gained 2 per cent. in scholarship*, pushing up above the mark the smokers originally reached, while the *smokers lost 8 per cent. in scholarship*. "The smokers lost ground not only relatively, but absolutely. When they left, they were very much poorer students



Copyright, 1911, Scientific Temperance Federation, Boston.

these men of the newly-acquired smoking habit were somewhat stronger than the non-smoking men, so they had an advantage at the start. After they began to smoke, the non-smoking men not only overtook them, but passed them. The smokers gained 18 per cent. in strength; the non-smokers 20 per cent.

EVEN ATHLETICS DID NOT GIVE SMOKERS LEAD IN LUNG CAPACITY.

EIGHT of these ten men with their new smoking habit were known as athletes and would naturally be supposed to gain more physically than the ten non-smokers for of the latter but four were athletes. The two groups were tested on lung capacity. In the first test non-smokers were ahead; in the sec-

than when they entered."

Thus the young man who entered college free from the smoking habit, and under superior conditions of physical and mental equipment found themselves outstripped both in body and mind by the ten men who never smoked.

The study is of particular interest because it indicates not only that the boy but the young man who forms the smoking habit after boyhood may fall behind in physical and mental efficiency.

LESSON SUGGESTIONS

Use this article and the one on nerves (p. 120) and the two charts to teach the lesson: Tobacco using, even by superior, full-grown men, impairs physical and mental efficiency and in a short time. Growing boys are injured much more, often permanently. The effects of nicotine accumulate and the injuries increase, especially after age 40. (See also pp. 109 and 114.)

Swedish Campaign against the Cigaret

WHEN an evil becomes as widespread as the present cigaret habit among boys, the single efforts of a few individuals here and there have only a small effect. The opposition must be as general as the evil in order to make much of an impression.

How such an opposition movement may be originated and carried forward is well illustrated by the thorough and energetic campaign organized in Västeras, Sweden.

In this town as in others in Sweden the use of tobacco by children has become so common that, according to a report in *Hvita Bandet*, little five-year-olds are sometimes seen with cigarets in their mouths. [This is true of some American cities, also.]

The seriousness of the situation aroused a few moving spirits in the town to see what could be done about it. A committee of women physicians was chosen to take the matter into consideration.

After several deliberations, this committee recommended that the temperance and religious societies of the city be asked to co-operate, so that a large and influential backing could be obtained for arousing as strong a public sentiment as possible against the evil.

Representatives appointed from twenty-two local societies came together and passed a series of resolutions, providing among other means, (1) a petition to the city government to give the police authority to take cigarets away from children found smoking them; (2) use of the press to arouse public opinion on the subject; (3) arrangements for a large public meeting where the matter should be treated by able speakers from the medical, hygienic, pedagogical and other standpoints.

An executive committee was appointed to carry out the provisions. On their committee was a city public school inspector, a police

commissioner, and a man and a woman pledged to lead in forming a large juvenile anti-tobacco organization.

The speakers were secured—a physician and a teacher—and a large and successful meeting was held where further resolutions were adopted calling public attention to the widespread evil of tobacco smoking among boys and girls, and the harmful effects upon their health and development.

The resolutions asked the city tobacco sellers, kindly, but firmly, not to sell tobacco in any form to children. They asked the city rulers to take the most active measures possible to stop the selling to minors. They asked school authorities and teachers to take especial care that the children received scientific instruction in school concerning the nature and injurious effects of tobacco.

Copies of the resolutions were sent to the city authorities, including the school officers and to all tobacco dealers, including the restaurant proprietors.

Favorable replies were received from the municipal officers and from the tobacco sellers who cheerfully promised—with the exception of a few small ones unable to resist temptation—not to sell to children. And, encouraged by the public sentiment thus aroused, the public school teachers worked with new energy against the smoking habit among the school children.

The large executive committee was not discharged, but kept standing to continue work against the evil until results should be accomplished.

Such an effort to use one of the strongest of moral forces—public sentiment against a dangerous evil, may well be copied with every prospect of success, by towns and communities everywhere.—*Translated for the SCIENTIFIC TEMPERANCE JOURNAL.*

Striking the Man Through the Boy

THE writer of this article is a teacher who has studied boys under unusually favorable conditions. Besides this the writer has been the physical director in two schools, gymnasium director in a third, and has taken very active part in the athletics of all the schools with which he has been connected. These several factors have made it possible to enter into a real comradeship with very many boys.

First of all, it was a matter of surprise to learn the number of boys, of different ages,

who were smoking more or less; for instance, 15 per cent. of the 12-year-old boys, 20 per cent. of those 13 years old, 38 per cent. of fourteen, 29 per cent. of fifteen, 57 per cent. of sixteen, and 71 per cent. of seventeen-year-old boys were either smoking or had smoked recently. This great number seems almost unbelievable, but it is based upon very careful observation, and upon many heart-to-heart talks. Furthermore, it is interesting to note that all of the five hundred boys studied were private-school boys, who are supposed to have

better care than those going to public institutions, so that it is possible that in the latter schools the percentages would be higher. And then, again, it is more than probable that the percentages were actually higher among the boys studied, for there were doubtless many boys who smoked more or less of whom the writer had no certain knowledge. But even were these percentages half as large, the problem would be one for serious consideration, especially after one has compared the school grades of the smokers and non-smokers, as the writer has done. The following for instance, gives the average school grades of smokers and non-smokers between the ages of twelve and seventeen, inclusive, the entire number of boys being, as has been said about five hundred.

SMOKING LOWERS GRADES

Age	12	13	14	15	16	17
Grade of non-smokers.....	83	90	80	84	87	85
Grade of smokers	73	75	73	75	75	68

If these figures are anywhere near correct (and the writer has every reason to believe them to be an under-estimate, if anything), then there can be no doubt as to the effect of smoking upon the mentality of the growing boy.

Of course there are other considerations. For instance, the good student is generally more likely to stay at home than other boys, and it is the other kind of boy, the out-of-doors boy, who is likely to take up smoking. Generally, too, the boys who stand highest in the class are not so fond of outdoor sports as those who rank below them; and again, it is the latter type, as much through pure boyish "devilment" as anything, that takes up smoking thinking there is something "sporty" about it. Beginning in this way, however, the sport finally become a habit. But even after considering these points, the percentages are too large to be accounted for by such excuses, so that we are driven to the almost undeniable conclusion that the effect of smoking upon a boy's mind is very serious, putting his mental efficiency from 12 to 15 per cent. below that of the boy who does not smoke.

MORAL STAMINA IS WEAKENED

And so, as was to be expected, the writer found that the boys at the bottom of the class are almost always smokers, that they are generally older than the average of their class, generally possessing less self-control, generally less honest in their work, and hence, usually very troublesome. There is a vast difference between the boy who is naturally "slow" but who tries conscientiously to progress, and the boy who has dulled his mind by smoking, and

is perhaps careless as to whether he advances or not.

To be sure there are other habits among boys which tend to make them inefficient and dull, but the writer has found it to be a fact that boys possessing such habits are generally smokers, and, indeed students of "boy psychology" will frequently say that smoking is likely to put a boy in such a condition that other and worse habits will be taken up, largely on account of a weakened moral stamina.

GROWTH IS HANDICAPPED

It is usual to say that a boy's smoking is likely to stunt his growth, and indeed the writer has found by means of many physical measurements, that the smoker is commonly below the average size for his age. But on the other hand, there are found not a few smokers, and steady ones too, who are quite tall and broad for their years. But in almost every such case the writer has found the well-grown smoker to be more than dull mentally, while sometimes the little "stunted" ones are quite bright. From this the writer has concluded, perhaps with some reasonable basis, that smoking is very likely to stunt something, most probably the mind, or perhaps the body only, or sometimes both mind and body, as is the most usual case, in the writer's opinion.

SCHOOL AND HOME MUST ACT

Perhaps as interesting a phase as any is the laxity, in the observance of the law, which has made such smoking possible. Almost every state has regulations concerning the sale of tobacco to boys.

That so many boys smoke, then, is a great evil, and the responsibility must be laid to the administrative authorities of our cities for not making effective such laws as cover the evil, to the schools which fail to give a rational education to the children in their charge, and finally, the responsibility must be laid to our homes, and there lies the root of the condition of things. For if the homes should insist upon a carrying out of the law, and assist that carrying out, the average dealer would think long before selling tobacco to a boy. Then, too, should the homes insist upon it, the schools would take the matter up, and impress the boys, at the most impressionable time in their lives, with the gravity of yielding to this harmful habit. And then, if the homes did their duty by their own children, smoking among boys would rapidly decrease.

It is in the hope that many homes will look upon the matter in a new light that the writer has written this article. *The American.*

Impairment of Eyesight by Tobacco

By FRANCIS DOWLING, M. D., CINCINNATI

How tobacco impairs the efficiency of the workers who are preparing it for use is told in this summary of an interesting report (*Lancet Clinic*, 1908) of an investigation made in tobacco factories of the effects of tobacco on eyesight. It should be noted that it was not the handling, but the use of the tobacco which affected eyesight unfavorably.

THERE are from fifteen to eighteen grades of tobacco used in our factories. The packers of the cigar factories have to be very careful in getting the proper shades of tobacco together in the boxes, each of which is marked with the packer's name. If there is an off-shade in the box, the packer is called to time for his mistake; if the mistake is repeated, he is let go or given other work that does not require as keen a color perception as packing. In this way the heavy smokers can be detected in the factories by their waning color sense.

HABITS OF THE EMPLOYEES

INVESTIGATIONS showed that none of these men [those selected for examination] drank to any great extent. The women, up to the present time, seem to be practically exempt from this trouble. Out of fifty examined in our tobacco factories some years ago, only one was found to have this disease (amblyopia), and that to a slight degree only. She was an old-time employee in the stripping department.

Of all the male employees in the factories examined into, 90 per cent. use tobacco in some form or other. About 10 per cent. chew tobacco in addition to smoking liberally a pipe or cigars before and after working hours. The ventilation of the workrooms was, as a general thing, as good as could be expected in establishments of this kind.

CONFUSION OF COLORS

THE principal colors confounded by those who were examined were: red, confounded with pink, dark brown or black, the latter usually in the pronounced states; green confounded with light blue or white.

The men examined ranged in age from 35 to 68 years, and were among the heaviest consumers of tobacco in the factories, so that they were among the best subjects that could be selected for the object in view, viz., ascertaining the effect of tobacco on the eyes.

As a result of all my investigations in this department, the following would be a fair résumé of the principal symptoms which characterize chronic tobacco poisoning affecting the organs of vision.

IMPEDIMENT APPEARS IN MIDDLE LIFE

THE subjects who usually suffer with tobacco blindness are almost always males be-

tween the ages of 35 and 68. Exceptions to this occasionally occur and in one of my own series of examinations, made some years ago, I found a young man aged nineteen who represented a well-marked case of this trouble. He was a most inveterate smoker and chewer of tobacco.

HOW THE INJURY SHOWS ITSELF

THERE is almost always a gradual but progressive failure of visual acuteness in both eyes. This was noticed more or less in a large number of all those I examined. Luminous objects dazzle the eyesight, and a bright light is worse for reading by than a subdued one. These patients see better in the evening than in the middle of the day. In addition to this, patients often complain of a glimmering mist which covers all objects, especially in a bright light.

Persistent contraction of both pupils is generally present, and this was a marked symptom in most of the cases examined by me. This symptom was present in many cases where the men were heavy chewers of tobacco, even where there was very little other evidence of injury.

Lastly, the examination of the eyes of those affected with tobacco blindness reveals the papilla of the optic nerve to be more than usually red in the early part of the affection. Later it appears anaemic, especially on the temporal half, and finally wasting of the disc takes place.

NICOTINE THE CAUSE OF THE MISCHIEF

THE deleterious effects of tobacco on the system in general, or on the eyes, is due, as we all know, to the presence of a poisonous substance called nicotine. This oily, colored fluid diffuses itself into the blood with as much rapidity as prussic acid, and a poisonous dose has been known to kill an adult in three minutes. When dry tobacco is smoked the greater part of the nicotine is decomposed, and passes off with the smoke. The more moist the tobacco—and the cheap grades are usually damp—the more this is retarded. The cheaper grades of tobacco contain more nicotine than the more expensive ones, and consequently are more injurious to the consumers, and this is probably one reason that tobacco blindness is more common among poorer classes than among the rich. The tobacco used for chewing is very rich in nicotine.

Scientific Temperance Journal

Founded by Mary H. Hunt

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Copyright, 1911, Scientific Temperance Federation, Boston.

Entered as second class matter June 1, 1909, at the postoffice at Boston, Mass., under the Act of March 3, 1879.



A child's hand is on the door-latch of the millennium.

MARY H. HUNT.

July 4, 1830.

April 24, 1906.

One By-Product of Cigaret Using

TEMPTATIONS to young people never seem to hunt singly. Aside from the physical, mental or moral effects of the habit of cigaret-using, we have to reckon with the influence of the often vulgar pictures issued with the cigarets. Their purpose, of course, is to increase the sale of the cigaret. They appeal to the fad for "collecting" which every boy is as sure to have sooner or later as the chicken-pox, and which wisely and sympathetically guided may give him real profit as well as pleasure. But if the pictures are ever so harmless, everytime he handles the cards they bring him the suggestion of cigaret-using as many of them, at least, bear cigaret advertisements.

As to the pictures themselves, many are to say the least, vulgar. Prize-fighters and their histories are not conducive to the highest ideals of manliness. The pictures that just escape the limitations of the law have a special peril at the age when most boys begin to smoke, fourteen years and upward.

This is a difficulty that will have to be met on its own ground. If the collection mania lies behind it, there will have to be careful substitution of interests. One Bible school teacher keeps herself supplied with foreign postage stamps which she facetiously calls—though not to the boys—"boy-bait," and it catches the boys! Organizations like the Knights of King Arthur and properly managed Boy Scouts may do a vast amount of good in meeting the whole cigaret problem, the first by its emphasis on high ideals in thought, interests and action, the second, by providing outlet for natural energy in ways interesting, useful and truly manly.

The Heroic Appeal

WHENEVER a universal law can be brought to the service of any cause results may be logically expected.

The universal tendency to imitate is a tremendous force, and it is this force, now working in the wrong direction that is directly responsible for most of the smoking among children.

If this same power could now be set in motion in the opposite direction, the trouble might be practically ended in a generation or two. Can this be done?

A prominent writer on social purity, Prof. W. S. Hall, says that he finds the heroic appeal one of the most powerful in awakening a response. Why can not this appeal be made to bear fruit in dealing with the tobacco question?

The larger boys can be shown the great injury tobacco does to the smaller boys, and that it is according to a law of nature that the small boys should try to do what they see the large boys—and the man—do. Then the heroic appeal, desistance for the sake of the small boys, may be tried with prospect of success.

Doubtless many men whose example is most directly responsible for smoking all down the line to the toddling five-year-olds, could be influenced by this appeal—if strongly pressed. It is at least worth trying. But success in this as in every other effort to stop the deteriorating effect of tobacco must be based upon clear evidence of the actual harm it does. Hence the collection of indisputable evidence is a fundamental part of the work.

If we are hoping to reform mankind, we must begin, not with adults whose habits and ideals are set, but with children who are still plastic. We must begin with children in the home, the school, the street, the playground.—Charles W. Eliot.

The Injurious Effects of Smoking upon the Blood Vessels

BY DR. S. KREUZFUCHS

NOTWITHSTANDING the repeated attention that has been given in the last few years to the injurious effects of smoking upon the blood vessels, the question of nicotineism has received far too little investigation.

It is, of course, a difficult matter to judge of the consequences of the misuse of tobacco because with most patients nicotine is not the only injurious factor. Nevertheless, one can assert as a result of the investigations already made, that nicotine is a special poison to the blood vessels.

The most familiar of the symptoms of chronic nicotine poisoning is *angina pectoris*, an expression of heavy smoking.

These attacks frequently appear at first as insignificant pain or as a sensation of pressure in the chest. It would be of great importance if in all cases of so-called nervous angina, inquiries were made as to the use of tobacco. In such inquiries little significance could be attached to the smoker's use of the terms "heavy," "moderate," or "light," for tolerance to nicotine varies greatly with the individual, and secondly with the opinion of the patient, and no great reliance can be placed upon the statements of the patient. I have repeatedly had occasion to notice patients who smoked one cigar after another before my eyes who only the day before had called themselves light smokers.

Another symptom not unusual in heavy smokers is a painful sensation of fatigue in the legs, especially after the use of strong cigars or smoking several cigars in succession. These symptoms which are often admitted by the patient and are ascribed very often by the physician simply to neurasthenia, are not so unimportant.

Another accompaniment of chronic nicotineism is pain in the stomach, described sometimes as boring, sometimes as burning, and needs, according to the two descriptions, our particular attention. In the first case it leads to false diagnosis. It is taken to be a stomach trouble, the gastric contents are investigated and an over- or an under-acidity is found, which apparently explains the symptom and the patient is treated for abnormal secretions, obviously without improvement, as long as he does not stop smoking. In the second case we find the cause of the pain in the sclerotic (hardening, thickening or

toughening) changes in the blood vessels, the cause of which, at least in many cases, is attributable to nicotineism.

A last but not lesser symptom of chronic nicotineism is flatulence, a very frequent accompaniment of disturbances of the circulation. It attacks smokers particularly in the night and disappears after rising.

To sum up, then, we see in nicotine poisoning a series of phenomena which at first may be denominated toxic symptoms, but which in time become fixed and give rise to organic disease.

In all the forms described the authors agree upon the presence of a contraction of the vessels as a factor producing the symptoms of the disease.

It goes without saying that in all cases of sclerotic changes in the blood vessels in which constriction of the vessels play the chief role, the patient must be strictly forbidden to use nicotine, since it would do no good to introduce all possible cures without eliminating that which in all probability is the cause of the trouble.—*Translated for the SCIENTIFIC TEMPERANCE JOURNAL.*

Unexpected Reinforcements

THE METROPOLITAN Life Insurance Company has done a notable piece of educational temperance work in devoting to the effects of alcohol one entire number of "The Metropolitan," a paper of which it issues several millions of copies for its policy-holders. It treats in a popular way practical questions of the relation of drink to industrial accidents, mental ability, longevity, public health and working ability. Among the writers are Dr. George W. Webster, president of the Illinois State Board of Health, Dr. Frederick Peterson of Columbia University, Dr. Richard C. Cabot of Boston, Rev. Richard Wright, Cambridge, and the secretaries of the Scientific Temperance Federation through whose co-operation the articles were obtained. The Federation also furnished several illustrative diagrams.

The insurance companies are doing what is perhaps a little known but certainly a most far-reaching work of education in personal and public health, including temperance, through the bulletins and papers frequently issued to their policy-holders.

*From an address before the Society for Physikalische Medizin, Mar. 21, 1909. Reported in Wiener Medizinische Wochenschrift, Ur. 39, 1909.

"For good ye are and bad, and like to coins. Some true, some light, but every one of you Stamped with the Image of the King."

A Great Memorial to A Great Man

BY LUCY PAGE GASTON

Superintendent of the Anti-Cigaret League of America

THE FORCES of right are today largely impotent because scattered. There are enough right-thinking people to do wonders in the way of needed reform. If their efforts could only be focussed and properly directed, much that is evil would slink to cover. Badness is weak and rotten; needing only to be attacked in earnest.

A well-known reformer blames "the inactivity of the virtuous" quite as much as the "activity of the vicious" for the unfortunate conditions that prevail. A "spasm" of reform often shows what power good people have when hurled against any evil in a pronounced contest.

In the present "reign of crime," it is youthful criminals in the main, who are placing life and property in peril. It is mere boys who plunder, who beat down and sometimes kill the defenceless. A majority are of American-born parents and have attended our public schools, but have somehow failed to become good citizens. Earnest educators are seeking a remedy for the wide-spread immorality of the youth.

The churches are facing the same problem. They find they are not holding even the children and young people of their own members.

According to statistics presented at the World's Sunday School Convention at Washington, D. C. in 1910, 75 per cent. of the boys are deserting the Sunday Schools *each year*. This is an astonishing condition for Christian workers to face.

But serious as the case now is, the tide can be turned. This can only be done, however, by a concerted movement by the churches and schools, aided by all interested in moral welfare of the youth. How this can be done is the burning question of the day.

BAD habits are the starting point in any career of recklessness, and this is the point that is not being properly safeguarded. A high enough note is not being struck for moral reform. The heroic element that slumbers in every young life must be aroused and this is not accomplished by the ordinary subjects and methods either in school or church and the young drift into temptation.

Experience is proving that pledging boys upon their honor against cigarettes and tobacco in any form at least until they are twenty-one and following this up with enlisting them in an organized effort to combat other evils, result in untold good to an entire school or community. This is a good

place to begin a fight for better moral conditions and the Anti-Cigaret League of America is leading an America-wide campaign based on this plan.

RECRUITING FOR THE NEW GRAND ARMY

THE League is now recruiting members for its One Million Club with great success. The active membership of this club is made up of pledged boys. Girls may become associate members and all non-tobacco users and sympathizers over eighteen years are invited to become honorary members. The fee of a dime (payable annually) entitles each member to an A. C. L. button, which boys especially, are proud and happy to wear. Recruiting stations should be established in every church Parish House, Y. M. C. A., Settlement, Boy Scout Headquarters and Boy's Club where companies can be formed to attend monthly rallies and other gatherings in a body. Good speakers, readers and singers are glad to give their services when the churches of a community in turn open their doors for meetings for old and young and such occasions grow in attendance and power for good.

The whole of Greater New York is now being districted with the hope of reaching every boy in the city. Chicago is also calling upon leaders in Christian, Reform and educational work to unite on a similar plan. Each of these cities has its stakes set to enlist at least 100,000 members of the One Million Club and every other city should fall into line for a simultaneous campaign without delay. Regular meetings in each district in New York and Chicago will receive reports of the progress being made from month to month as a part of the program and the effort must result in a great moral uplift.

The One Million Club has been started as a memorial to Abraham Lincoln, a life-long abstainer from both liquor and tobacco. His name is one to conjure with in this effort to train the youth of America to habits of purity and abstinence. It is hoped that the One Million Club may in time become the Two Million Club and a tide set in that will help free America from the slavery of vice—the great need of the day.

All friends of the tempted boys should get in touch with this inspiring movement without delay. Address Anti-Cigaret League of America, General Headquarters 1119 Woman's Temple, Chicago, Ill. Eastern Headquarters, Presbyterian Bldg., 156 Fifth Ave., New York.

Effect of Tobacco Poisoning Upon the Nerves

THE statement has been made that the effects of tobacco so far as observed, are only functional, that is, disorders of normal processes, never organic, or structural. Evidence obtained by a series of animal experiments conducted by Guillian and Gy (*Compe. rend. Soc. de biol.*, 1908), resulted in the detection of actual changes in the structure of nerve cells in animals poisoned with tobacco.

The injuries discovered consisted almost entirely of changes in the fine granular bodies of the cells which became diminished in number, cloudy and discolored; and in the appearance of "vacuoles" or places in the cells in which the characteristic network had disappeared. Such "vacuoles" are produced in the nerve cells by fatigue. Their extension over the entire cells means the disappearance or death of the cell.

Not all the cells were damaged to the same extent in the tobacco poisoned animals. Cells injured in varying degrees would be found in the midst of others entirely sound.

The authors state expressly that the different poisonous substances seem to show in tobacco poisoning a special affinity for the nerve cells. It is here that the maximum damage is found. These lesions, they say, are interesting to know, and to put parallel with the multiplicity of nervous symptoms observed so often in experimental tobacco poisoning as well as in the human subject. "With men, or at least with certain subjects, the prolonged and immoderate use of tobacco often causes disorders of the intellect, such as difficulty of attention, inability to fix or associate ideas."

Their findings apparently show the physiological basis for these symptoms.—*Translated for* SCIENTIFIC TEMPERANCE JOURNAL.

Why Ex-Governor Hughes' Father Stopped Smoking

THE father of Ex-Governor Hughes, of New York, was a Baptist minister.

When a young man in college, and even after entering the ministry, he smoked considerably, but finally decided that for a preacher to smoke was not proper. After numerous attempts to limit his indulgence he concluded that the only way was to give it up entirely. How he came to this decision is told in his own words, quoted in the New York *Christian Advocate*:

I began to smoke when I was sixteen or seventeen, and during my college life I indulged much. We had our college prayer-meetings at six o'clock in those days. Before each meeting and before I went to my classes I had to have my smoke.

After my ordination into the ministry I thought that it was incongruous for a minister to set the example of smoking to the young men of his congregation. I gave it up again and again, but I always returned to it, because I had tried to give it up of my own strength.

Finally I had promised my congregation I would give up smoking except with my friends. Some time after this my father-in-law came to visit us, and I was very glad indeed, because I could sit down and smoke three times a day with him. One day I went up stairs, expecting my father-in-law, who was down stairs, to follow me shortly. I filled my pipe, and began to smoke, but my father-in-law did not come.

I smoked on and on, expecting him, but feeling rather uneasy about smoking while he was down stairs. I sat down with the open Bible near me. While I was filling my pipe mechanically, my eye came upon a verse in the Bible. It was: "Whatsoever ye do, whether ye eat or drink, do all for the glory of God."

It came like a voice from heaven to me. I put my pipe back into the box and knelt down in prayer. I said, "I don't smoke for the glory of God." I had never realized that smoking was a sin. I know that it is a sin now. I vowed I would never touch tobacco again until I could do it for the glory of God. I have never had the slightest desire for tobacco from that day to this.

(Concluded from page 116)

The outlook for the cure of patients suffering with dullness of vision due to tobacco is good if the patient comes under treatment early; in some cases complete recovery occurs and very great improvement is the rule. In long standing cases moderate improvement is all he can expect. If smoking is persisted in no improvement takes place under any system of treatment.

DO YOU REALLY WANT TO GIVE IT UP?

A lady who had been doing temperance work among Freedmen, told of one colored woman, a member of the church, but addicted to drink, who had finally given up the habit. She had struggled and prayed, and God had helped her, she said. Then she honestly added, "But I aint give up my terbacca yit. Yaas'm, 'course I knows He'd help me dar, too, but you see I aint rightly felt like axin' Him 'bout dat."—Forward.

Class=Room Helps

Conducted by Ethel M. Mills

Spoiling the Great Investment

The Unfruitful Vineyard

ONCE upon a time in far-off Palestine there lived a fine lad named David. All through his boyhood as he looked about him he saw the beautiful and profitable vineyards, he longed for the time when he should become a man and have a vineyard of his own. How delicious would be the grapes for food; how refreshing their juice when pressed out and drunk fresh from the vines, and when he sold the grapes how prosperous he would be. He could help little lame Esther, feed poor old Abraham, and shelter the little children of his dead kinsman.

And now the time was come. His father took him outside the city, pointed out a fine large tract of land, and gave it to him. It was to belong to him and to his children forever.

The soil was fine, but there were many stones; it was grown up to wild vines and brambles; there was no hedge about it to keep the wild animals from destroying the vines, nor any watch-tower from which to discover enemies and drive them away.

But David was young and strong and he rejoiced in his land and his heart beat fast as he thought of the splendid vineyard he was to have by-and-by.

He lost no time in beginning to make his dream come true. Early and late he toiled under the hot sun. He cleared off the stones and the brambles, and he set fine, strong grapevines and carefully trimmed them so they might yield heavily. And he fenced it all about and built a watchtower so that the wild beasts and other enemies should be kept out. He did everything possible, and at last, after spending so much time and hard labor, he felt that he had a right to expect a rich harvest.

But, alas, when he went to gather the vintage he found that in spite of all he had spent upon the vineyard, the good vines had been choked out by "wild grapes," that is, by weeds and vines. Instead of the grapes, luscious and valuable, there were poisonous berries.

No grapes for food, no money to help others, no hope of a good vineyard, for already all had been done that could be done. And so, sorrowfully, he abandoned it. The

hedges were broken, the watch-tower fell down, and the wild beasts ravaged it at will. (See Isaiah V: 1-10 for the essentials of the story.)

The True Story of Paul

ONCE upon a time in a fine American town, there lived a young man and his wife. They had a beautiful home and many things to make them happy. Only one thing they lacked. They longed and prayed for a little boy to love and train.

At last their prayer was answered: the father held in his arms a dear little son. He was named Paul. They were almost too happy to speak. Often they hung over the baby's cradle and talked of the care they would give him, how happy he would make them and of how good and helpful to others he would be when he became a man.

I can't begin to tell you how much they loved the little boy. They were always trying to make him happy. His father worked, oh, so hard, to earn the extra money for his food, clothes, books, and toys, the mother to give him the right kind of food, to care for his clothes, and to keep him well. They took great care to teach him to be truthful and unselfish, and to give him the right kind of playmates.

It was as though they were always in a watch-tower watching to see that no enemies got in to steal his health or happiness or goodness.

Once he was dreadfully sick. For a long time the doctor came every day and they feared they would lose their little boy. Day after day and through many long nights they watched over him, scarcely taking time to eat or sleep until at last he got well again.

But they didn't mind all the money they spent or how hard they worked to take good care of him because they loved him and looked forward to the good man they expected he would be.

He was a bright, loving little fellow, and studied well so he got along nicely at school. Almost before his father and mother knew it, it was time for him to go away to college. They feared to have him go away, but as they had done everything they could and had

taught him the best they knew, they let him go. They had a right to expect that he would pay them back by doing right and making a good man of himself.

For a time he did finely in college. Then some of the college boys laughed at him and got him to using cigarets although he knew he ought not. He thought the smoking did not hurt him any because for some time he could not see it himself. When he got through college and went to work hard, he smoked more and more, and then he began to drink and do other wrong things. His father and mother grieved so that he stopped some of his wicked ways, but try as hard as he could, he could not stop smoking. He knew it was making a slave of him, but he couldn't seem to help himself. Then the smoking began to make him very sick. His body was broken down by all this and the wrong things he had done so he could not get well, and after some time he died.

The splendid man his parents had hoped for was spoiled. Their boy was lost. After all they had done to help him be a good useful man he had spoiled himself and left them in sorrow alone. They could never be happy again for there is no sorrow in the world so great as that which parents feel when they see their children spoiled and lost.

LESSON SUGGESTIONS

Purpose of the Lesson. To impress children with the thoughts of (1) how much they have cost in money and labor and love; (2) that this expenditure by parents and teachers is not for themselves, but for the sake of the fine men and women these children are to be, and of their helpfulness to others; (3) that in view of all this expenditure parents have a right to expect "good fruit"; and (4) that it isn't "square" for a child to spoil with cigarets or alcoholic drinks or any kind of wrong doing, the man or woman which it has cost the parents so much to make possible. Even if a wicked child seems to deserve the punishment it falls even more heavily on those that love him.

Lesson Suggestions for Younger Children. Tell the story of the vineyard very simply but graphically. Bring out the points clearly: the expectation of the owner; his long hard toil; his disappointment at not getting a harvest as he rightfully should; the fact that unfruitfulness deprives others of good; the desolation of the unfruitful. Get the children to see that when after everything possible has been done to make the vineyard fruitful and then it yielded no harvest, it deserved the destruction that came to it.

Then tell the story of Paul (which in the main actually happened), bringing out the points given in the "Purpose of the Lesson." If it is desired to use this for an anti-alcohol instead of an anti-cigaret lesson tell a similar story of some boy who fell, through moderate drinking. Unfortunately such cases are so common that teachers know of several from which the one best adapted can be selected.

Apply it to the children themselves, leading them to see that all the first part is practically the story of their own lives. What do their parents do for them? Have they been cared for in sickness, etc.? Why do parents make such sacrifices for them? What do their parents have a right to expect from them? How do your mothers feel when you do wrong? Lead the children to see that when they do wrong or do not do all they can at school and elsewhere others always suffer. Paul might have said that if his smoking hurt him he would be the only one to suffer. But was it true?

In speaking of "Paul" tell the children that it is true that his is an extreme case. Smoking doesn't very often lead to so much harm. But if it happens that once in a while "cigarets did it" in a case like this, and he was a man grown, not a boy, we can see that it is dangerous. None can tell beforehand whether he might not suffer so too. He wanted to stop but could not.

From the data given (pp. 114, etc.) show that the boy who begins to smoke suffers almost immediately physically, mentally, morally and, a little later, economically, and that the damage done in these precious growing years can never be fully repaired. Show how growth depends upon the proper action of the lungs, blood vessels, nervous system and nutrition, and how tobacco, by interfering with such action, makes healthy development impossible.

POINTERS FOR USE IN OLDER CLASSES.

(Temperance S. S. Lesson, May 21, 1911.

Isa. V: 1-10.)

My well beloved. What does it cost in time, strength, money, love and anxiety to rear a boy? Note, also, that all the sacrifices of our patriots have been largely for him, "posterity." The vineyard well represents the boy as well as that collection of individuals we call a nation.

Fruitful hill: good natural endowment.

Made a wine press: trained the child so that his ability might serve himself and others.

Fenced in, and built a tower: the protection of good environment and exclusion of enemies to character.

Brought forth wild grapes: poisonous berries; "wild oats."

What could I have done more? Parents, teachers and friends can do much to help, but the time very soon comes when the child must decide and act for himself partly or entirely. Each is really "self-made."

I will take away the hedge from the vineyard and it shall be eaten up, etc. God works through natural laws. It is not that He desires to leave one defenceless but the action of the law makes it certain that the defences will be destroyed. When a boy begins to smoke or to drink he himself breaks down the protection of good training and environment which his friends have built about him.

It shall not be pruned or digged but there shall come up briars and thorns. Forest land if entirely cleared up is soon overgrown with underbrush, the well cultivated garden with weeds. No cultivation means briars and thorns; thistles cover the untilled ground.

The use of cigarets, tobacco or liquors dulls the mental and moral powers. (See statement by Probation Officer Copp and others). Boys or girls may thus put themselves where cultivation of gifts cannot help them, or at least only in a moderate degree.

He looked for judgment, for righteousness, but found none. What can be expected from degenerated bodies, minds and hearts?

Of a truth many houses shall be desolate. How many thousands of boys and girls are ruined by narcotics. No desolation in any home begins to equal that from children spoiled, disgraced, lost, and no power can undo the wrong. Reformation may prevent new misery but cannot obliterate the old.

Ten acres of vineyard shall yield one bath. i. e. seven and one-half gallons of wine. Seed of a homer about 11.1 bushels, shall yield an ephah, about 1.4 bushels. Instead of receiving 40-, 60-, or 100-fold as nature provides, the yield is far less than the planting.

FOR SENIOR CLASSES.

In the place of the names of Israel read "America." Review briefly the history of (1) the founding of the nation by selected men and women and the ways in which we may well believe that Providence has intervened in favor of America; (2) the "oppression" found in the place of "judgment"; (3) discuss the ways in which the cigaret manufacturers, and the liquor traffic (each) "has joined house to house" till in many parts there is indeed "no place" and "houses are desolate"; and (4) the duty of patriot and Christian (a) to better local conditions; (b) to help save the nation and (c) the best means to effect such betterment.

As a preliminary to this lesson read "The True Crust of Civilization," by Ray Stannard Baker, (April American) and Richard Pearson Hobson's congressional speech, "The Great Destroyer," copies of which can be obtained free upon application to Congressman Hobson.

What Can We Teach the Girls?

DOUBTLESS there are many conscientious teachers who, like one recently met, are willing to teach temperance truths to their girls, but who feel that there is little to teach of special interest to them and that they do not need the warning against drink as nearly all boys do. But this is a great mistake.

Girls need to be taught the truth (a) so that they may always and intelligently throw their influence on the right side; (b) because they are to be teachers and mothers, hold the welfare of the race in their hands; and (c) because alcoholic drinks do constitute a grave menace to them as well as to boys, for

(1) Social temptations may abound; (2) some may be peculiarly susceptible to the effects of alcohol through heredity or impaired nervous or physical condition and the use of a comparatively small amount may result in inebriety; and (3) a single indulgence in wine may result in the girl's downfall, for it is a well-known fact that girls are frequently drugged in this manner, and even if no drugs are present in the drink excepting the alcohol, it in itself is often capable of serving the purpose of ruin. Girls should be warned very particularly against drinking with strangers, men or women, under any circumstances whatever.

In presenting the temperance lesson to girls (and there is much which is equally helpful in teaching boys) the excellent and authoritative article by Dr. Henry Smith Williams in the *Ladies' Home Journal* (p. 8, issue April 1, 1911) will be found most helpful. As the magazine is available almost everywhere, we furnish only the outline which may be used in connection with it. The girls should be directed to read the article carefully, and be ready to discuss it in class. If each makes an outline or abstract of it, the lesson will make a much deeper impression. Not only should the warnings be clear cut and definite, but the lesson of the personal responsibility of each should be earnestly pressed home.

The Price a Woman Pays for Alcohol

I. ALCOHOL TENDS TO MAR BEAUTY.

1. The *skin* is likely (a) to become thickened, and blotches and pimples appear, or (b) to become dull, leaden, or bloated in appearance.

2. The *vital organs* as stomach, liver, kid-

neys, are apt to be impaired in function and structure.

3. The *impaired circulation and impoverished blood* lower resistance to diseases, as erysipelas, pneumonia, consumption, etc.

4. The *nervous system* almost invariably suffers which often results in loss of "charm," nervous exhaustion, bad temper, hysteria, untruthfulness, impaired self-control, or even insanity.

II. ALCOHOL SERIOUSLY ENDANGERS CHARACTER.

1. General effects on nervous system (see p. 81) are to coarsen personality and greatly impair judgment and self-control.

2. The drug effect of alcohol even when used in small quantities increases susceptibility to temptation while at the same time it decreases modesty and self-control.

III. ALCOHOL MENACES THE WELFARE OF THE CHILDREN.

1. The offspring of drinking mothers are apt to show impaired vitality which may be manifested in non-viability, nervous diseases including chorea, convulsions, epilepsy, or idiocy, etc.

2. The use of alcohol by nursing mothers injuriously affects their infants because (a) the milk becomes unsuited to build up healthy bodies; and (b) the poison appears in the milk causing the infants to be restless or irritable, or, quite possibly, to have convulsions. Many of such children afterwards become drunkards.

How He Lost His Golden Opportunity

HERE is a true story of how a young Stocktonian, a college graduate, lost life's golden opportunity, a story with a strong lesson for all young men, and for parents as well.

In a prominent Stockton family is a young man graduated from one of California's leading universities. That young man wanted a position. He desired to take up railroading and to enter the clerical department of one of the large companies. His parents were intimately acquainted with an ex-Congressman, formerly of Stockton, but now a resident elsewhere. Thinking that the former Congressman's influence might be of some avail in securing a situation for their son, on a recent visit of the former legislator to Stockton they broached the matter to him.

The ex-Congressman at once promised to use his influence and stated to the parents that

he felt quite certain of being able to secure a position for the young man. The gentleman then visited San Francisco, and going to the office of a high official of the Southern Pacific Company, with whom he was well acquainted, told the railroad man that he would like to secure a good position for a young man with whose family he was quite intimate.

The young man is a university graduate and a bright young fellow, was the way the ex-Congressman recommended the young Stocktonian.

Why, certainly, replied the railroad official. The Southern Pacific Company always has room for bright, capable young men. Send him to me.

The ex-Congressman returned to Stockton and assured the parents that he had secured a position for their son. He told them to send the young man down to see the high railroad

official, and that the latter would put him to work. The ex-Congressman then went to his home. About a month later he visited Stockton and called on the family to see how the young man was getting along. He found the family surrounded by gloom.

"We thought you said it was all fixed," they said. "But our boy went down to see Mr. B. and he hasn't gone to work yet."

"Then something must be wrong. I'll see about it."

Deeply chagrined and highly exercised, the former legislator hastened to San Francisco to see the railroad man.

"Why didn't you give that young man a position?" demanded he of the railroad man. "I told his parents that you would put him to work, and now you've thrown me down."

"It is true," replied the Southern Pacific official, "that the young man of whom you speak called to see me. When he came I was busy and he had to sit in the ante-room for five minutes. But the time was too long for him. He couldn't wait there five minutes without pulling out a sack of tobacco and rolling a cigaret. The Southern Pacific needs bright and ambitious young men, but it has no room for boys who vaporize their brains with tobacco or blow smoke through their nostrils."—*The Home Alliance*.

LESSON SUGGESTIONS

Use the above story as a point of contact. If each boy is directed to interrogate some business man as to his practice in regard to hiring cigaret smokers and the reasons therefor, and the results of the investigation are discussed in class, the boys will see that it is a typical case. Lead the boys to see that employers need employees who are neat; polite; mentally quick, accurate, and able to concentrate; ambitious, strong, vital and enduring, i. e., who are thoroughly trustworthy. Draw from experience and from the matter elsewhere in this Journal to show specifically how cigars tend to impair all these necessary qualifications. Be fair and dispassionate. Convince the boys' reason. "Don't preach but teach."

Helps in Curing the Tobacco Habit

AS a temporary aid to one in breaking up the habit Dr. O. Clayton Jones says (London *Lancet*) there is nothing better than peppermint drops. A boy cannot smoke with one in his mouth and for an hour after it is dissolved tobacco will not blend kindly with the taste that remains.

"It is seldom" says another English writer, "that a man discovers his bondage to the filthy habit until he seeks to abandon it. Then he finds too often that he has parted with his will-power as a part of the price of his indulgence."

"A cure calls for entire abstinence from tobacco, clean and wholesome living, with an abundance of pure air. Vapor baths and sim-

ilar eliminative treatments will help to cleanse the system, which must be braced by gentle tonics. [Lupulin tablets (2 grain) will help the nervous symptoms.] A complete restoration to health may require some length of time. This will depend upon the extent to which the health has suffered. But a determination to be free from the influence of tobacco backed by a faithful resort to all possible physical, mental, and moral aids to purity, will in most cases soon accomplish a blessed deliverance from the effects of the unclean vice."

A more complete scheme of treatment may be found in an article by Dr. T. D. Crothers in the JOURNAL (p. 134, May, 1910).

The Teacher's Responsibility

A YOUNG man on failing to secure a re-election as principal of the high school remarked: "I can't understand why it is a crime for me to smoke when every member of the Board of Education smokes and no one says a word about it."...

The teacher who loves children and who realizes the power for good or for harm placed in his hands by the office of teacher, has no difficulty in understanding why the community demands more of him morally than of other people. One who cannot understand the reasonableness of this discrimination ought never to be licensed as a teacher.

In schools where two per cent. of the boys drop out of school as a result of cigaret smoking under a superintendent who does not smoke, five per cent. drop out for the same reason under his successor who smokes.

To be responsible for a habit that takes just one boy out of school and places him in the alley is bad enough. Some time no one will be permitted to teach in the public schools or in the normal schools or colleges who indulges in smoking or in the moderate use of liquor. The sentiment is such at the present time that eminent educators fail to get the enjoyment out of these practices that is afforded to those engaged in other lines of work.—*Nebraska Teacher*.

Hardly Blood Relations

"WHAT were you and Mr. Smith talking about in the parlor?" demanded Miss Blushe's mother.

"Oh, we were discussing our kith and kin," replied the young lady.

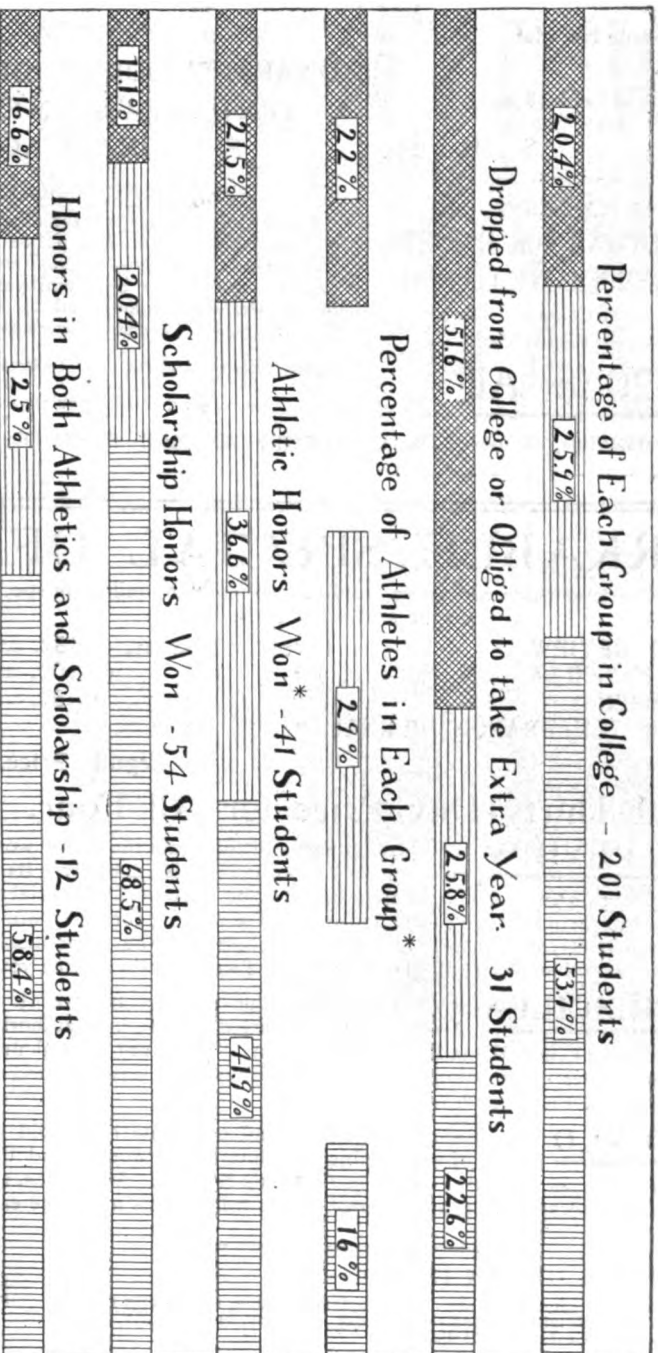
"Yeth, you wath," interposed her little sister. Mr. Thmith asked you for a kith and you thaid 'You kin.'—*Boston Traveler*.

Smoking as a Handicap

From a study by EDWIN C. CLARKE, of the Students in Clark College, Worcester, Mass., 1906-1909.

Diagonal lines represent Habitual Smokers (41). Horizontal lines represent Occasional Smokers (82).

Vertical lines represent Non-smokers (100).



Copyright 1911, by
Scientific Temperance
Federation, Boston.

*Only one sixth (16 per cent) of the non-smokers were athletes but they won nearly one-half (49.1 per cent) of the athletic honors.

"As a rule, the non-smoker is mentally superior to both the occasional and the habitual smoker."—Clarke.

Lower scholarship in smokers is not only the result of smoking itself, but is bound up with athletics and club life. "Smokers, athletes and fraternity men have lower scholarship records than other students."—Dr. Mylan, Columbia Univ.

ANTI-TOBACCO HELPS

Cigaret Stereopticon Slides }
Anti-Tobacco Charts . . . } For Sale

Power of Tobacco Habit	each	\$.20
Why the Cigaret is Especially Harmful		.20
Use of Tobacco		.05
Boy and the Cigaret		.05
Avoiding a Dangerous Blind Lead (18 pp.)		.05
(Best all-round Anti-Cig.-No. Journal.)		
This Journal in quantities	\$.50 a doz.	

SPECIAL OFFER

SET OF SLIDES SUFFICIENT FOR ILLUSTRATED SCIENTIFIC TEMPERANCE LECTURE

Half the Slides Colored

Complete with Copyrighted Ms.

Only \$20 for All

SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull St., Boston

The Temperance Problem

Presented from the standpoint of

HEALTH, ECONOMICS, CIVICS

in a manner to

DISARM PREJUDICE, GRIP ATTENTION, CREATE ENTHUSIASM, ENCOURAGE ACTION

SPECIALLY DESIRABLE FOR

Labor Unions, Lyceums and Chautauquas, Societies of Christian Endeavor, Parental or Industrial Schools, No-License Campaigns, Public Temperance Meetings held in Churches or by Temperance Organizations, Social Welfare Workers and for High and Normal Schools and for Teachers' Meetings.

Trained Lecturers Available Lectures Illustrated if Desired

Send for full Particulars and Terms

SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull St., Boston

REMARKABLE SPECIAL OFFERS

We have made arrangements with three publishers to make the following special offer for the next thirty days.

PICTORIAL REVIEW,	-	-	1 year, 12 issues, @ 15c. = \$1.80
MODERN PRISCILLA,	-	-	" " @ 10c. = 1.20
LADIES' WORLD,	-	-	" " @ 5c. = .60
SCIENTIFIC TEMPERANCE JOURNAL,	"	"	.60

Regular Price, \$4.20

 **Special Thirty-Day Price for All Four, - \$1.50**

PICTORIAL REVIEW The fashion pages of this magazine have won for it a circulation of over 600,000 copies monthly. Its styles and patterns are famous the world over. Ask your dressmaker. She knows. The special articles, fiction stories and household departments are timely and instructive reading for every woman who does her own thinking for herself. PICTORIAL REVIEW is a necessity in the economical management of the home and the wardrobe. You will get this magazine each month for one year.

MODERN PRISCILLA is recognized as the leading fancy-work magazine of America. It is to-day the undisputed authority on all kinds of embroidery, crochet, lace, lingerie and home decoration. There are several departments devoted to china, oil and water color painting, stenciling, pyrography leather work, basketry, etc. You will get this magazine each month for one year.

LADIES' WORLD is a thoroughly practical and up-to-date household magazine, and treats of every subject of interest to women and the home. Its household departments are as good as a course in Domestic Science. Its stories, verses and entertainments for children always please and interest. You will get this magazine each month for a year.

ALCOHOL AND THE HUMAN BODY

By Horsley and Sturge. Recognized as the most complete, reliable, interesting and valuable book on Alcohol and Human life, health, efficiency, morality, and heredity, yet published. 370 pages; 16 beautiful plates; 21 diagrams.

SCIENTIFIC TEMPERANCE JOURNAL

Packed full every month of readable, up-to-date, carefully stated facts about alcoholic drinks and narcotics gathered from scientists and scientific papers all over the world. Specially helpful to teachers and church, S. S. and social workers.

Send for other special club rates of the JOURNAL with magazines and helpful books.

Send Your Order at Once—NOW
Before You Forget it—to

SCIENTIFIC TEMPERANCE JOURNAL, Boston, Mass.

BOTH for

a

DOLLAR BILL

(till June 1, 1911).

Rec'd
1911

SCIENTIFIC TEMPERANCE JOURNAL

— *Continuing the* —
SCHOOL PHYSIOLOGY JOURNAL



In Memoriam

OUR fathers and brothers died for our country; it is our duty to live for it. We must pay a price as they paid a price. The price which we must pay for liberty is a pure manhood and an eternal vigilance. The monument which I would place by the graves of our noble dead would be, not a cold marble statue, but an honorable, wide-awake, honest, intelligent, moral, God-fearing American citizen.

— *David Gregg, D. D.*

Published at—
BOSTON, MASS.

MAY, 1911

New Century Series

—OF—

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fulness and accuracy of the treatment in regard to the nature and effects of alcoholic drinks and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

Total Abstainers

Through Classification

may receive equity in premium cost with an old line, legal reserve life insurance company

**It will obligate you only
the cost of a Postage
Stamp to know about it**

Our low premium Perfection Endowment and Monthly Income policies protect every contingency.

Write to-day—give your age

Do you want a position ?

We want to increase our agency force. Write now. Address

TOTAL ABSTINENCE DEPARTMENT

Security Mutual Life Insurance Co.

Binghampton, N. Y.

Scientific Temperance Literature

	per 100	each
Facts Concerning Alcohol	.15	
Drink and the Doctor's Bill	.15	
Sinning Against the Unborn	.15	
The Causes of Alcoholism	.15	
Alcohol and the Death-Rate	.15	
Alcoholism and Tuberculosis	.35	
Effects of Alcohol on School Children	.35	
Alcohol and Degeneration (colored chart)	.65	
Alcoholism in Wine-growing Countries	.30	
Wine to Drive out Drunkenness	.30	
Wine a Peril to Childhood	.30	
False Claims for Wine	.35	
Plain Facts About Beer	.40	
Dangers in the Use of Beer (20 pp.)	2.50	
Alcohol and the Individual (Dr. H. S. Williams)		\$.05
London Congress Report		.10
International Course of Study in Hygiene and Temperance (per doz., \$.50)		.05
"Teacher's Helps" Packages		\$.10; \$.15; \$.25
"Distribution Packages"		
400 leaflets \$1.00. Order as "Package No. 1" or "Package No. 2." Each contains simply stated practical facts about alcoholic drinks. Just what you want to create really intelligent temperance sentiment in your community.		
Package No. 1, 50 leaflets each of 8 different kinds.		
Package No. 2, 100 leaflets each of four different kinds.		

A NEW METHOD--Travelling Loan Exhibit of Graphic Charts

Exhibit consists of 28 Colored Charts (framed or not as desired, size 22x28) illustrating statistically the Relation of Alcohol to Crime, Heredity, Mental and Muscular Ability, to Tuberculosis and other Infectious Diseases, Longevity, etc. No objectionable

Send for Full Information as to Expense and Plan for Use.

details. Based on most reliable scientific experiments. Excellent for No-License Campaigns and for General Expositions, Teachers' Institutes, Charitable Organizations, C. E. Conventions, S. S. Associations, Temperance Lectures.

NEW CHART SERIES

WHAT YOU HAVE BEEN ASKING FOR

Inexpensive reproduction of the large charts. Use them in Day and Sunday Schools. Set people thinking by displaying them in Shop Windows, Manufactories, Stores, on Bill Boards, etc.

Six of the series now ready, others to follow.

- No. 1—"Comparative Sickness of Drinkers and Abstainers" (see Dec. *Journal*.)
- No. 2—"Employers Who Prefer Non-Alcoholized Workmen" (see Jan. *Journal*.)
- No. 3—"Tuberculosis and Nervous Diseases in the Children of Drinkers" (see Feb. *Journal*.)
- No. 4—"A 62-Mile Walking Match Between Abstainers and Moderate Drinkers" (see March *Journal*.)
- No. 5—"Smoking as a Handicap" (see April *Journal*.)
- No. 7—"Effects of Alcohol on Memory" (see May *Journal*.)

Handsomely printed in red on coated paper; also 9x13 in.

Each, \$.05

Trial Order (5), only \$.15

Per Dozen, \$.25

SCIENTIFIC TEMPERANCE JOURNAL,

23 Trull Street, Boston, Mass.

Scientific Temperance Journal

Vol. XX

BOSTON, MAY, 1911

No. 9

Wanted — Soldiers of Peace

IT is one thing to be against wrong; it is quite another to fight wrong. One is a non-combatant that never won a cause; the other a soldier in the fight. Good citizens need to become more aggressive. The man that is afraid to show his colors and stand in the open against evils is of little benefit to good government. The country needs soldiers of peace as well as soldiers of war.—*Ex-Governor Folk.*



Abstinence as a Condition to a Higher State of Civilization*

BY PROF. BRETISLAV FOUSTKA, M. D.,

Instructor in Sociology, University of Prague

I LOOK upon the abstinence idea as a component part of the whole conception of life and the world, a new conception of modern men, and at the same time a factor which is beginning to definitely influence our present day civilization.

Since I know that alcoholism lowers the vitality and the physical and mental efficiency of the individual and of society, while abstinence, on the contrary, assures a higher ethical and economic level of a people, I am an abstainer, and this conviction carries its influence into my whole conduct of life.

The abstinence idea, and abstinence practice is an expression of a need, of a desire, felt by men of the present time for a physical, mental and moral revival, a renaissance, a new birth. Such a new civilization must of necessity be an abstaining civilization, for alcoholism is a degenerating factor and abstinence a vitalizing one. Only a sober and pure people will be strong and enduring in the competitive struggle of the races.

BETTER AND PURER SENSIBILITIES

CULTIVATION of the sensibilities is a matter of great importance in man's development. But alcoholism lowers and distorts the feelings, promotes coarseness, baseness and perversity and by unchaining the lower instincts checks the development of the higher, nobler and purer feelings.

THE VALUE OF ABSTINENCE TO THE ARTIST

EVEN in artistic circles the opinion is gaining ground that all great works are accomplished, not by the help of alcohol, but in spite of it. A real artist who has a new message for the world will be careful not to weaken his creative powers by alcohol, and especially will he guard against allowing his truthful imagination to sink into mere fantasy.

Abstinence enables him to bring new impulses, new perspectives to bear upon his work, to originate new conceptions. He looks upon the world with very different eyes from the artist who is a friend to alcohol.

General abstinence will establish a more congenial understanding between the artist who creates and the public that enjoys. A good deal is said about carrying aesthetics into every day life; but how much of the love of beauty can be found in the stupid, smoke-saturated tippler?

A CIVILIZATION OF PURER AFFECTION

WHOEVER follows the ethical tendencies of the present time will not deny one thing: the striving after greater moral purity. Men of today feel the need of a new, higher, purer morality. Tolstoi, Björnson, Talcott, Williams, Charles Féré, Heim, a whole host of noble men and women in all countries are united in this demand.

The question here is practically one of a better and purer relation between men and women. Men do not wish to be ascetics, but they desire nobler, purer love. And when one considers how alcohol degrades true love, how it opens the door to prostitution, how a couple of glasses of wine or beer in the hands of an experienced roué become a recognized means of seduction, then one understands how freedom from alcohol will promote this tendency towards higher and purer love.

THE SOCIAL CONSCIENCE WILL LEAD TO ABSTINENCE

ANOTHER characteristic of modern man is that his social conscience is awakening. One sees this in the growing care of the oppressed and suffering taken by society, such as measures for the amelioration of the conditions of labor, and the care of destitute children. But what will this care of the children amount to

*From a pamphlet bearing this title (1908.)

if parents, teachers, and society in general set before children and youth the example of drinking and do nothing to protect them from alcohol.

I venture to assert that this awakening of the social conscience will of necessity lead to abstinence, at least among those who do not repudiate their share of responsibility for the evils that alcohol causes. It was on this ground that Kipling became an abstainer.

ABSTINENCE WILL IMPROVE POLITICAL LIFE

STATE-CRAFT in every nation will gain much from conscientious abstinence. We are already in possession of positive data showing how the sobriety of a people influences for good the political life of a nation. It is very instructive to read some of the new reports of this matter, such as that of Stephan Grossmann, who emphasizes the fact that the removal of alcohol from conventions in Sweden and Norway and the strong abstinence movement in those countries has greatly elevated their political life, made it more refined, more positive and less subject to the rule of the demagogue.

It is a significant fact that in the highly awakened countries political activity seeks to unite with the abstinent movement. The entirely bloodless revolution through which Norway and Sweden dissolved their union was a remarkable occurrence. In this political action the workmen of Norway took an influential part, and their organization adopted as its watchword during that revolution, from October 30 to November 7, "No man is to use a drop of spirituous drink."

In Finland the great progressive movement by which the women were given equal political qualification was carried directly by an energetic abstinence movement.

NATIONAL ECONOMICS IMPROVED BY ABSTINENCE

AN improved economic condition is also to be realized through abstinence. I do not mean the direct saving which would result

from a smaller expenditure for alcohol... nor avoidance of the colossal indirect loss from alcohol caused by poverty and crime, but a higher economic development which is the product of greater physical, intellectual and moral activity, a phase of economy that is in no small degree a moral question. In modern economics we do not reckon simply from one day to another, we take a wide outlook. . . . It is not a question of the great profits of a few capitalists but of the economic strengthening of the masses.

I may cite Finland again as an example. We see here a small people who in spite of the barrenness of their land have developed their industrial system, dairying particularly, so thoroughly and widely that in efficiency they have surpassed the Germans. And this small people devotes annually to the cause of abstinence a million and a half Finnish marks [\$300,000]. The democratization of the people by means of abstinence—that is the point.

ETHICS IN MECHANICS

A NEW factor to be reckoned with in mechanics is its connection with ethics. In no other branch of activity is there so much responsibility toward the general public. Take, for example, bridge-building, coal-mining, railroading. The railroad-bridge wreck in the court of Polytechnic in Zurich, is a visual demonstration of the connection between ethics and mechanics.

In mechanical works the constant cry is "Look out!" "Look out!", but an alcoholic can not "look out". . . . The greater the social importance of any mechanical work, the greater the need of abstinence.

In all the ramifications of thought, feeling and living, abstinence can show positive results; it is not a negative quantity. Abstinence offers the broadest possible road for progress.

I close with the declaration that one of the most important movements in the life and civilization of all nations is the struggle for the sobriety of the people.

The Prevention of Insanity*

BY HOMER FOLKS

Secretary of the State Charities Aid Association of New York.

IT WILL doubtless surprise most persons to know that the insane now in hospitals in the United States number at least 200,000, a number which if gathered together in one place would make a city like Denver, and the total annual cost of caring for them is about \$50,000,000.

The writer accustomed to visiting public

institutions of all kinds for two decades, casually remarked to the medical superintendent of a large hospital for the insane which he was inspecting some two years ago, looking about at hundreds of patients, "I suppose you are as far as ever from knowing what brings all these people here."

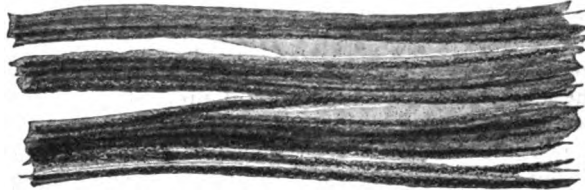
*Abridged from *Review of Reviews* for May.

"Not at all," said the superintendent, "we know perfectly well what brings many of them here. As to others, we can make a good guess, and as to still others, we know but little." He then detailed something of the extent and limitations of our present knowledge of the causes of insanity. Other physicians experienced in the care of mental disease, were questioned and a surprising agreement was found as to the direct, specific, unmistakable causes of certain forms of insanity.

What, then, are some of these causes of insanity?

THE REAL CAUSE OF PARESIS

ONE of the most dreadful of all the forms of insanity is that which is popularly known as "softening of the brain" and is known scientifically as paresis, or general paralysis.



NORMAL NERVE FIBERS*

This particular form of insanity is absolutely incurable by any means now known to the medical profession. Those afflicted with it suffer gradual but complete mental and physical decay. The very substance of the brain

undefined and uncertain. They are due directly and exclusively to the use of alcohol. Its discontinuance may be followed by recovery; its continued use means to these patients insanity and early death. Here again the proportion of men admitted to hospitals for the insane suffering from the alcoholic insanities is greater than the proportion of women, being, roughly speaking, 20 per cent. of the men admitted and 10 per cent. of the women.

The State Charities Aid Association and the other organizations engaged in the prevention of insanity are not temperance societies; they were not formed in the first instance by people who were particularly interested in the temperance question; or if so interested, that interest found expression in other directions. The time has come, however, when every per-



NERVE FIBRES AFFECTED BY ALCOHOL*

and its appearance become changed. These unfortunates live but a few years. This disease is, in substantially every case, caused by an earlier disease, syphilis.

THE RELATION OF ALCOHOL TO INSANITY

AMONG the various types of insanity, of which at least a dozen might be enumerated, three are so directly traceable to a particular cause that, though differing in important aspects, they are known collectively as the *alcoholic* insanities. No hospital physician questions the direct relation of cause and effect between alcohol and these three types of insanity. There are other forms of insanity to which the use of alcohol is believed by many to be a contributing cause to an extent as yet

son desirous of promoting the health and happiness of his fellowmen and preventing disease, and especially the great scourges of tuberculosis and insanity, must join hands in furthering whatever methods stand the test

of practicability for the purpose of stopping the exploitation of the weakness of human beings for profit. Let us recognize, once for all, that liquors are not made to be drunk, but to be sold; that the most difficult factor in the problem of intemperance is not the man who wants to drink, but the man who wants to sell drinks.

PRACTICAL PREVENTIVE WORK

THESE [and others omitted] being the causes of insanity, what can be done about them? How far can this knowledge find actual application? If preventable, how far can insanity be prevented? There is a striking similarity in general outline between the movement for the prevention of tuberculosis

*Cuts from *Central of Mind and Body*, Gullick Hygiene Series, courtesy of Ginn and Co., Boston.

and that for the prevention of insanity. Probably this will also hold true of future movements for the prevention of other diseases. Two distinct lines are indicated from the outset. One the general education of the public as to the nature, cause, and modes of prevention of the disease, and the other its earlier detection and treatment. The one proceeds upon the perfectly safe assumption that if people generally understand the facts they will, to a considerable degree, adjust their lives accordingly. People prefer health to sickness, sanity to insanity, freedom to incarceration. If men and boys know that consorting with prostitutes is very likely to mean syphilis, and that syphilis may mean paresis [softening of the brain] and early death, there will be less consorting with prostitutes. If people generally know that the habitual and immoderate use of alcohol leads hundreds of men and women to the doors of the hospitals of the insane, there will be fewer instances of the habitual and the immoderate use of alcohol. Man is a reasoning animal. He does not burn his finger twice in the same fire. He is not wholly rational, but he tends to be rational, and it is always worth while to inform him.

On this safe and sure basis the State Char-

ities Aid Association, has outlined and is carrying into effect, a movement for popular education along scientific lines and by sound psychological methods, as to the causes and prevention of insanity.

KEEP THE DEVILS OUT

No other fact in modern social life is so hopeful as these various movements for the prevention of diseases. Insanity has filled great hospitals, until teeming populations are thus set apart. We have suffered all these things to be done because the lines of responsibility were not clearly defined—because the facts were not clear beyond all possibility of doubt. This comfortable margin of uncertainty affords us refuge no longer. Science points at us its finger and says, "Thou art the man. Thou art thy brother's keeper." We now know not only that we are our brother's keepers, but we know how to keep him; how to conserve his life forces. We know how to build up a strong, vigorous race fit to live; fit to build up a great nation; fit for deeds of constructive life; fit to promote the education, uplifting, strengthening of the masses, not simply of the few. . . .

The devils are not to be cast out, they are to be kept from getting in.

A Danger at the Soda Fountains

WITH the coming summer the soda fountain with its variety of "soft" drinks and delicacies, offers many attractions to young and old.

Quite aside from the questionable use of alcoholic drinks in the flavoring of wine sauces, frozen pudding, etc., served by many of the ice-cream-soda-fountain-combinations, another peril has grown up unperceived for the most part which threatens even more formidable dangers—the increasing use of drinks containing caffeine and especially cocaine.

Many dealers serve various bromides also which cannot be considered harmless and their use on lay administration should certainly be discouraged.

The growth of the cocaine habit, the multiplication of the drinks containing these dangerous drugs require that no time be lost in warning the public and especially young people of the dangers. The JOURNAL, therefore, brings together data concerning the drinks themselves, the pathological effect of cocaine and caffeine, and the consequences of the easily-formed cocaine habit. Some of the drinks described by Dr. Kebler "contained both caffeine and extract of coca leaf. . . ."

Others contained caffeine but there was no evidence that coca leaf in any form had been used in their manufacture. A list of these drinks will be found in Dr. Kebler's article in the report (1909) of the Homes Commission appointed by President Roosevelt.

Soft Drinks Containing Poisons

BY LYMAN F. KEBLER, M. D., PH. D.

Chief Division of Drugs, U. S. Dept. of Agriculture.

DURING the past decade soda-fountain specialties containing caffeine, extract of Kola nut and extract of coca leaf, the active principle of which is cocaine, have been offered in considerable quantities and, due to extensive and attractive advertising, both as beverages and as headache remedies and nerve tonics, their sale has reached large proportions.

The first appearance of preparations of this type was in the South in the eighties, their introduction following the success which Moxie had attained in the East, though this particular drink was of entirely different character. From the South the demand spread to other

sections and the number of products has increased until at the present time there are probably over one hundred of them bottled and sold all over the United States. The greatest demand is still in the South, however, and almost every drug store, confectionery shop and fruit stand has its favorite product on sale. The carbonated goods in bottled form are offered on the trains. People of all classes, young and old, delicate women and even little children consume these beverages indiscriminately and no warning is ever given of the baneful effect of the powerful habit-forming drugs concealed therein. It is therefore small wonder that the prevalence of the so-called "coca-cola fiend" is becoming a matter of great importance and concern.

It is well known that some of these products are mixed under the most unsanitary conditions. The sugar, water, and drug material will be dumped into a pot standing in the cellar of some low building, or even a stable, where the ceiling is covered with dust, cobwebs, and dirt of all descriptions and the floor littered with filth. The steam from boiling

kettle, condensing on the ceiling, collects the dirt in the drops of water and this falls back into the mixture. Again the sirup boils over on the floor and a sticky mass remains which soon collects straw and filth of all descriptions and becomes a rendezvous for flies and other vermin, for usually no attempt is made to clean up.

Judging from the names of most of these products it would appear that extract of Kola nut is one of the chief ingredients, and while in certain instances the drug is undoubtedly present, in most cases the caffeine has been added as the alkaloid caffeine obtained from refuse tea sweepings or made artificially from uric acid occurring in the guano deposits of South America, or in the citrated form and the sirup colored with caramel. The cocaine found is usually added in the form of extract of coca leaf. Some of the manufacturers claim that the extract used is prepared from a decocainized coca leaf, the refuse product discarded in the manufacture of cocaine.—President Roosevelt's *Homes Commission Report*, (1909).

The Cocaine Habit

BY CLEVELAND MOFFETT

DURING a recent visit to Washington I talked with two heads of departments in the bureau of chemistry, both active in the government prosecutions of drugged soda-water sirups.

"There is no question," said one of these authorities, "that the presence of cocaine in soft drinks tends to create in the consumer, whether child or adult, a predisposition towards the cocaine habit."

It is evident that the manufacturers of these soft drink sirups have only one motive for putting cocaine into them, that is to make them popular, to make them taste good, and make them sell better. And this popularity, this pleasant taste and better sale come simply and solely because there is enough cocaine in these soft drinks to give something of the stimulating and exhilarating effect that cocaine always gives.

"It is not uncommon," says Dr. Kebler, "to find persons addicted to the use of medicated soft drinks."

Parents as a rule, withhold tea and coffee from children, but having no knowledge of the presence of cocaine, caffeine or other deleterious agents in soft drinks, they unwittingly permit their children to be harmed by their use."

As an indication of the danger of young people acquiring the cocaine habit, let me

quote Frank M. Sommer. In an address at East Orange, New Jersey, in which he described his experiences as Chief of Police of the County, he said that in his fight against cocaine sellers in Newark in 1907, when he arrested more than one hundred dealers, he was appalled by the spread of the cocaine habit among school boys. Many of them, he found, were confirmed users of "coke." Dealers sold it to them in quantities as small as a penny's worth.

"During my regime," he said, "I handled more than two hundred cases of victims of cocaine, and among them were some children as young as eight years of age."

WHAT IS COCAINE?

COCAINE? What is it? The *Standard Dictionary* tells us: "Cocaine, a white, bitter, crystalline alkaloid contained in coca leaves; used in medicine as a local anesthetic."

And again: "Coca, the dried leaves of a South American shrub of the flax family, used in medicine." Needless to add, there is no connection between the coca shrub and the cocoa palm tree that produces the cocoa nuts.

Science by concentrating the essence of coca leaves in the white powder of crystals of cocaine, has put into the hands of men, women and children a terrible agency for evil.

In his message of February 21, 1910, President Taft submitted a report of the opium commission in which Hamilton Wright presented some startling facts regarding the use of cocaine. He says: "Looking at the wider aspect of the use of cocaine throughout the United States there is absolutely trustworthy information that the use of this drug has spread widely among the criminal classes of our large cities, that it is used by those concerned in the white slave traffic to corrupt young girls. . . ." The use of cocaine threatens to creep into the higher social ranks of the country. . . .

"I consider the cocaine habit the most insidious and terrible in its hold and effects of all drug habits. It destroys the moral sense, it wrecks the body. It is worse than morphine, worse than opium, worse than hasheesh. It is the easiest habit to acquire and the hardest to cure. Among adults it is practically incurable." This opinion was given me by Dr. Podstata, a Chicago physician and recognized authority on the subject.

COCAINE WORSE THAN MORPHINE

THERE is a great difference between cocaine and morphine. The morphine habit is bad enough, but cocaine is infinitely worse. The effects of one dose of morphine last for many hours, often for twenty-four hours, but the effects of one dose of cocaine cease within a single hour, so another dose must be taken,

and another and another. A man may take morphine for twenty years or more and do his work, but the slave to cocaine does no work and rarely lives more than five years.

"Coke fiends" have no desire for food. They frequently go days without eating and become gaunt and emaciated. They pass many nights without sleeping, in fact they cannot sleep until they fall into a stupor of utter exhaustion.

Out of this stupor they come back to consciousness with only one thought and one fierce desire—to get more cocaine; they must get it to relieve their intolerable suffering and craving, and they are ready to get it by any possible means. They will break any law, they will commit any crime to get this drug or get money to buy it. It takes a great deal more money to buy enough cocaine to satisfy a coke fiend than it takes to buy enough alcohol or morphine or opium to satisfy the victims of those habits.

COCAINE NEVER NEEDED

GOVERNMENT chemists are authority for the statement that there is danger from cocaine in soda-water sirups. There is no question of the danger of using it as a hay-fever or catarrh remedy. It is not necessary for this sort of cures. It is not necessary in soda water. It is put into those commodities for the sole purpose of enabling the manufacturer to make more money.—*Hamptons' Magazine*, May, 1911.

Alcohol and Epilepsy

BY DR. E. HERM. MULLER

THAT the epileptic is frequently the child of a drinker is well known. According to the calculation of Martin, one-third of the living children of drunken parents are epileptics. Special importance in the tendency to epilepsy, as well as to feeble-mindedness, has been attributed to intoxication at the time of conception.

In view of the great difficulty in ascertaining whether the occurrence of conception during alcoholic influence is a mere assertion on a probability from existing conditions, Bezzola undertook to find whether any relation existed between the time of the most abundant use of alcohol and the conception period of the weak-minded. His important work, which brought out the evidence that the periods of highest consumption of alcohol correspond to the periods most fruitful in the production of idiots, is now well known. . . .

Statements concerning the alcoholic heredity of epileptics vary considerably. Two au-

thors who may be particularly mentioned are Strohmayr, who found alcoholic heredity in 20 per cent. of his hospital patients, but stated in a foot-note that among 100 cases in his private practice where the parents were of the better classes, there was no single case of parental alcoholism.

In our own cases, where we had information concerning several generations, with side branches, there were a few of the better class families in which no alcoholism was reported, but I have the impression that we failed to get correct information.

Heinrich Vogt devoted considerable attention to alcoholism as a cause of epilepsy. His book on *Epilepsy in Childhood*, is the best and most comprehensive treatment of the subject based upon extensive experience and knowledge of the literature.

*Extracts from a Report of Investigations made by Dr. Muller and published in the *Monatsschrift für Psychiatrie u. Neurologie*, 1910.

According to Vogt, alcohol, has a very close connection with the origin of epilepsy, even when the epilepsy is only a part of the deterioration due to alcoholism.

It is not yet ascertained how the forms of degeneration are distributed among the mental and physical abnormalities; it is not yet possible for us to make more definite statements in this direction, although we believe ourselves justified in the impression that we have for explanation the fact that the epileptic with hereditary alcoholic taint has also numerous abnormalities in the physical direction, more, it seems to us, than other epileptics. Our exact investigations into this phase of the subject are as yet, however, very limited; we hope later to be in a position to make a report.

Vogt stated that epilepsy in the children of drunkards generally runs a particularly bad course. It fell to us to trace a special mode for this transmission. We were able to observe in a large number of cases that alcoholism in the parents of the paternal mother acted in a deleterious manner upon the grandchildren, even when their own mother was healthy. In one group of patients a process

of degeneracy was manifested analogous to the inheritance of a tendency to hemorrhage from slight causes.

Our work has demonstrated one class of cases in which the attacks ceased immediately after the establishment of abstinence and with no other medical treatment, but returned directly after the first glass of beer. We have patients who showed no signs of epilepsy for years while they abstained from alcohol, but as soon as they gave up their abstinence the trouble at once developed.

From the results of Vogt as well as those of Strohmayer and our own we see the old fact brought out anew, that alcoholism in the progenitor favors epilepsy in the descendants.

Our own study permits the following additional statements:

It is not only the chronic but also the occasional drinker especially who has this influence; alcoholic degeneracy will descend through a healthy daughter in spite of a sound strain on her husband's side, to the grandchildren (her children); the use of alcohol by an individual, even within discreet limits, can bring out a latent epilepsy.

Is Beer a Food?

BY DR. A. HOLITSCHER, CARLSBAD, GERMANY

[Physiologists are not yet all agreed as to whether alcohol should or should not, at least technically, be called a food chiefly because no comprehensive definition has yet been established. The views of those who think that furnishing energy and checking bodily outgo does not tell the whole story of food value are illustrated in this article by Dr. Holitscher, called out by the attempt of the German brewers to establish a food claim for beer. Editor.]

BEEER is not a food, can not be, and it is conscious or unconscious deception of the public to assert that it is.

Beer contains, it is true, besides the alcohol and extract, a quantity of fuel material which the body can utilize; should it not therefore be called a food?

No. Other absolutely injurious, unusable and poisonous material like glycerine, fusel oil chloroform or ether are burned in the body and their heat units can be estimated; but no one has thought of calling them foods.

But will not the beer extract promote a better use of other food stuffs; and is not beer for this reason a useful part of the dietary? No. The better assimilation of other food promoted by beer extract takes place only with a very insipid diet. In ordinary circumstances there is an abundance of material furnishing all the flavor necessary to promote utilization, without beer.

But is it not true that a quart and a half of beer a day is uninjurious?

No. On the contrary it is proved that a gram of alcohol per kilo (about 2 lbs.) of body weight—about as much as a quart and

a half of beer would furnish to a full grown man—has considerable influence upon the cell changes. This amount, if long continued, would result in reducing the tissue-store of licithin—a substance very important for the activity of the brain. The normal disposal of the *purin* substances would be interfered with, a disorder which gives rise to gout. Other important functions and processes would be disarranged.

Can a substance be called a food which sets up such disorders in the body?

But alcohol spares body albumen; that is a sure sign that it, and also beer, may be included in the food list.

Yes, it spares albumen. But why? Because it is a narcotic poison which lowers bodily functions. Fewer motions are made, less work is done; hence body material will of course be saved. *But morphine narcotizing will also spare albumen.*

All the world is agreed that children and youth should receive no alcoholic drinks. Do true foods injure children? Can we conclude that a man will be uninjured by a substance which is poisonous for children?

It has been proved that alcohol even when greatly diluted checks and injures the life of the cell.

And no substance which like beer, contains 4 per cent. of a cell poison can ever be a food. Whoever so asserts either does not know what a food is, or he deceives.

Raising the Masses

By a German Socialist in *Forwaerts*

THIS problem of drunkenness is a problem for the laborer also, and the more so since with him this form of disease means misery. The capitalist can spend his money for alcohol without becoming poorer, for his capital brings him in new wealth. He does not need to expend his physical or mental strength to gain money and can, therefore, dispense with his mind. His life amid pleasant surroundings, the higher grades of liquors and medical care, all soften for him the physical evils of drunkenness.

The laborer, however, who drinks to drunkenness makes his own life and that of his family a horror. He destroys the means of life of himself and family. He ruins his labor power so that his wages constantly sink. He becomes incapable of labor, loses his social position, becomes a beggar and bum and worse than orphans his children. It is not a question of the individual but of the mass; of whether the mass of workers shall dissipate its energies, shall waste its scanty resources, or whether it shall apply these energies and resources to its own education for the instruction of the coming generation and the strengthening of its own organization.—*National Prohibitionist*.

Keeping the Wits Sharp

PERSONS who with singular untruth are said to "do themselves well", or who habitually take alcohol between meals, gradually develop nerve changes which reveal themselves at first by loss of energy or lessened capacity for business and diminished attention to detail. Intellectually the brain failure also evinces itself by dulness, stupidity, and unreasonable errors. Such changes, which are due to the slow poisoning of the highest cerebral centres, are practically never attributed to the real cause; but, when recognized in time, the betterment which ensues on the adoption of total abstinence from alcohol is very striking. If the alcohol habit is maintained, then the cerebral deterioration increases, and may become so established that

the subject may entirely lose all power to abstain.

We are surrounded by thousands of men and women who are indeed in an early stage of subacute alcoholism, as exhibited by the quality and quantity of their mental power, which is relatively feeble and inadequate because of the lowering effect of alcohol taken in what they deem "moderate" doses. In these people of whom we are speaking all aspects of their psychic life suffer; their intelligence, their sentiments, their will-power are in an abnormal state; the harmonious interaction of the different faculties which go to make up personality being so upset that the temperament becomes altered in a marked way—querulousness, emotional irritability and unreliability being the prevailing characteristics. As the years go by a certain number of these patients slowly develop a state of chronic alcoholic dementia.—Horsley's *Alcohol and the Human Body*.

Eliminating an Annoyance

"NO, THANK you, I don't smoke," replied a bank president, quoted by a Chicago paper, as his host at luncheon tendered him a cigar. "Yes, I used to," he continued, "but I quit it because I wouldn't be annoyed by the craving for tobacco at times when it wasn't proper for me to smoke.

"I made a rule in the bank, you see, that none of the clerks should smoke during business hours. And, of course, I had to keep the rule myself. And I would all the while be wanting a cigar so bad, and be so anxious for business hours to be over so I could get at my cigar, that I was miserably uncomfortable all the time. I could hardly hold my mind to my work.

"So one day I got completely disgusted at the everlasting annoyance of it, and I said to myself, 'Here's where this nuisance quits'; and I haven't smoked since. I stopped with a half a boxful of cigars in my desk, and they are there yet.

"No, it wasn't as much of a hardship as I expected. When once I made up my mind that there wasn't any more smoking for me, the wish for it didn't last long. In just a few days I was working along without any bother whatever."—*Exchange*.

VAPORIZED CASH

"Mr. Chuggins ought to save a lot of money. He doesn't smoke."

"No, but he has a motor car that does."

—*Exchange*.

Scientific Temperance Journal

Founded by Mary H. Hunt

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each
Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSBAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Copyright, 1911, Scientific Temperance Federation, Boston.

Entered as second class matter June 1, 1909, at the postoffice at Boston, Mass., under the Act of March 3, 1879.

Conquering Preventable Disease

AMID the agitation for better health, the multiplying statistics of the cost and waste of disease and of the misery and inefficiency it causes, there is, nevertheless, a note of hope. The very term "preventable" applied to a class of these diseases which are being reduced by prevention as well as by cure brings encouragement in the knowledge that they may be avoided when enlightened common sense is applied to individual and social health conditions.

Not as much attention as yet has been given to the fact that alcoholism in its various manifestations is also a preventable disease; that insanity, so far as it is determined by alcoholic habits, is preventable, as Mr. Folks' article elsewhere indicates; that a large proportion of general diseases is due either directly to the alcohol-using habit or to a resistance lowered by alcohol, and therefore is absolutely preventable.

To a certain extent, the alcohol-caused disease is more easily preventable than that caused by germs. Tuberculosis or typhoid may be contracted as the result of some hardly recognized inattention to the keeping up of physical resistance. Exposure to the germs of these diseases is often subtle and untraceable.

Disease following continued alcohol-using, on the contrary, is the result of a definite, conscious act, the result of deliberate choice. Such disease, therefore, is preventable, by another conscious act—the deliberate choosing of abstinence.

Statistics compiled from government reports by Fr. U. F. Mueller, published recently in the *Journal*, showed that more men die from alcoholism and liver cirrhosis, which is largely an alcohol-caused disease, than from ty-

phoid, and ten times as many as from small-pox; among women, the death-rate was six times as great as from small-pox. This does not count at all the deaths from other diseases induced or promoted by alcohol.

Two facts, therefore,—not new, but receiving new significance—must soon find place in the great propaganda for public health:

Indulgence in alcoholic drinks is the cause, directly or indirectly, of a large amount of disease.

Disease due to this cause is absolutely preventable by the simple choice of abstinence from alcohol-using.

Pure Alcoholic Drinks

EVERY now and then the claim is made that far less harm would be done by alcoholic drinks if only strictly pure drinks were sold.

Under the present pure food laws, if any community is really solicitous about this matter, it should not be difficult to prevent the sale of drinks free from adulteration, since adulterated drinks are as liable to penalties as adulterated foods.

There is much evidence, however, that the harmfulness of "impure liquors" due to adulteration, is considerably overestimated.

More than ten years ago, Dr. J. J. Abel of Johns Hopkins University in his report on the pharmacological action of alcohol prepared for the Committee of Fifty, reviewed investigations of the subject in this country and in Canada, and came to the conclusion that "even the most harmful alcoholic beverages contain only a small percentage of dangerous and intoxicating substances other than ethyl alcohol. Ethyl alcohol alone is poisonous enough to account for all the evils of intemperance."

"When all the facts at hand are summed up, we must concur in the opinion expressed as long ago as 1859 by Magnus Huss, that the impurities and by-products of alcoholic beverages may be neglected altogether as a cause of the drink evil."

Even more recently, Dr. Alex. Lambert of Bellevue Hospital has had his word to the effect that "to the action of ethyl alcohol alone are due the symptoms of alcoholism as seen in man."

This being the case, it is a mere waste of energy to spend much time chasing the spectre of impurities in drink. "Legislation directed toward the drink evil," said Dr. Abel, "will always have to take account of the fact that the 'best' alcoholic drinks are as capable of producing this evil as are the poorest. Purification of these beverages alone can not hope to eradicate it."

Class-Room Helps

Conducted by Edith M. Mills

Remembering and Forgetting

FOR ADVANCED GRAMMAR GRADES

DISCUSS with the class the *value and necessity of memory*. What are the earliest recollections? (These are usually of feeling. Why?) Of what advantage are memories of pain and distress? Let each recall some striking occasion when remembering saved life or served some specially important purpose. Recall others where forgetting at some important point has caused distress or loss.

What would life be without memories of loved ones, happy events, beautiful pictures, objects and scenery? Suppose a case like Helen Keller's before she was taught and had none but the most meagre of memories stored up; of the case of an idiot who has none because he has no mind to register ideas. Consider the necessity of memory in scholarship or business. Ideas, memories, are the tools with which the mind works. Intelligence itself depends upon memory. How long would an employer retain even an office boy who could not remember his orders.

How memories are stored up. Trace simply the way in which memories have been stored up. Thus the first years saw spoken words and ideas of the most common, natural objects secured; then the simplest word pictures, reading and writing, and these were followed by easy scientific facts, geography, grammar, etc., with simple associations to link all together. Thus the store grows, but how?

If available, have at hand a phonograph with a wax record of some well-known air or speech, and explain how the impressions are made on the blank wax surface. Slowly reproduce a part of the record showing how the exact sounds registered are reproduced. The making of the record corresponds to the physical memory, the registering of impressions; the reproduction to recollection; the mind of the pupil recognizes the air and that corresponds to the psychic action of the brain in placing, or recognizing the impression previously stored up and recollected.

What is the mental apparatus by which memory records are recorded, recalled and recognized (re-known)?

Recall the gross anatomy of the brain, using chart or drawing on which the various centers are located and named. Show the illustration of the normal nerve fibers and of

the neurons of the gray matter given herewith, and if available, others, and sections of nerve fiber and of gray matter (the latter material can easily be obtained from any meat dealer). See that the pupils have a clear conception of the cell body, its nucleus, nucleolus, and nutritive mechanism, of its axon and of the dendrites and collaterals, also, how particularly dependent the brain and these cells are upon healthy circulation and complete nutrition pointing out the fact that fatigue, illness or any poison in the blood almost immediately affects them unfavorably.

Explain how some afferent impulse, as for e. g., the sight of the color red impresses itself upon, or, we may say, "marks," the cell; of how all the cells in the vicinity of this one also receive something of the impulse, and there is a tendency for this and succeeding impulses of the same kind to cause filaments, i. e., dendrites, to project from it and to connect impressions with other impulses having to do with this and which are stored in cells in other centers. The sight of the color red recalls the written word "red," other red objects, the sound of the spoken word "red," etc. Thus the oftener this cell is stimulated with this sense impression, the more deeply the cell is marked, the more the dendrites grow, and the more connections—associations—are made. Each concept associated with it becomes, as Prof. James has said, a hook by which the idea of red may be pulled up to consciousness, i. e., recalled. All the recorded impressions are necessary to a full comprehension of the concept and of a correct judgment of it. Dr. Thompson says that a well-balanced brain is one which, when some one center starts an idea, waits till the answer comes from all the other nerve centers which have communicating fibers with that center as to what they think about it.

Explain how, as it is believed, these dendrites interlace in the brain much as the branches and twigs of the forest trees interlace and that the impulses, somewhat like slight electric currents, are supposed to pass from one to the other and so full connections are made.

Requisites for good memory. For good memory, therefore, it is necessary, that (1) the separate cells holding the records should

be sound, fresh, and well-nourished in order that the records be accurate, clear-cut and definite, and this depends also upon the proper health of the sense organs sending the impulse, and (2) the transmitting "wires," fibers, must be in a condition of "high nervous tension" to quickly and accurately pass on the impulse.

A chain, as we often say, is only as strong as its weakest link. If any one of these mental links is weak or broken the memory is defective. Unless the idea can follow another route or brain path, the memory of the concept will be impaired or destroyed. The excellence of the memory in any individual depends partly upon the number and partly upon the persistence of these brain paths. Clearly enough, memory is the most precious because the most basal of the mental faculties. Judgment, reason, experience, the guide of the wise, all depend upon it. As James has pointed out, greatness depends upon amazing retentiveness; those who have it only in a moderate degree may excel in quality but not in quantity of work. In practical as in theoretic life, the man whose acquisitions *stick* is the one who is always advancing. His neighbors spend most of their time in relearning old matter. Therefore, since happiness, success and highest service depend upon a retentive and accurate memory, no pains should be spared to train it to highest efficiency, and no indulgence which can impair its powers can be afforded. A reasonable amount of time can not be better employed than in teaching pupils how to remember lessons and other important matters. (See references.)

The Arch Enemy of Memory

REFER to the common knowledge of the fact that heavy drinkers are often considered liars and are practically always exceedingly forgetful. Note, however, that this is the result of heavy drinking. How is it when smaller quantities are taken. Uncover the charts or blackboard drawings of the charts showing the effects of alcohol on memory (*Journal* pp. 67 and 136a).

Moderate quantities of alcohol reduce the AMOUNT of memorizing work done. Show first the results of Smith's experiments, the chart, p. 136a (1st section) and that on page 67, showing by the particulars of the test how reliable the results were. Suppose one were learning a number of pages of science. What would be the effect upon the result of the use of a similar amount of alcoholic drink? Apply the reliability in business. What would be the probable effect on advancement if one forgot a number of orders or other necessary data concerning the business in hand? What

effect upon such work as railroading or other particularly responsible work? What effect upon the scholastic or technical work of a man in college? Who would win the highest honors?

Alcohol increases the TIME required for memorizing. Show the results of Prof. R. Vogt's experiments (second part of chart, p. 136a) also explaining how his experiments were conducted. Quote similar data regarding Kraepelin's experiment which showed that the time required was $2\frac{1}{2}$ times as long with alcohol as without. Vogt's experiments proved that not only was the time longer, but the matter was not *retained* so well. Apply this to school, college, and business. What effect upon examination and high grades?

How is This Mischief Done?

REFER to the cuts of the normal neurons and nerves and recall the fact that complete and reliable memory depend upon the integrity and proper tone (1) of the special sense organs and thus their capability to transmit clear and accurate sensations; (2) of the registering neurons (with their dendrites and collaterals) and of the connecting nerve fibres; and depends (3) upon the healthy activity of the recognizing mind.

Show definitely but simply how alcohol even in moderate quantities impairs each part of the process.

1. ALCOHOL IMPAIRS THE CLEARNESS AND ACCURACY OF SENSE IMPRESSIONS. Note that this would be expected because of the well-known action of the drug in attacking the nervous system first. (See article on Lipoids p. 81, for one explanation.) Show cut of nerve fibres impaired by alcohol (p. 127) and get the full story of how special senses are impaired. (Cutten, pp. 167-179).

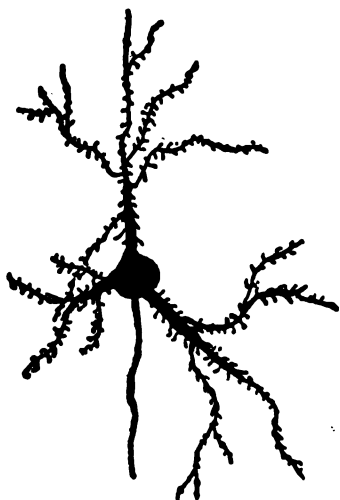
Sight. Experiments by Ridge, Kraepelin, Reis and others proved that in persons unaccustomed to alcohol very small doses shorten sight-range, blur forms and shapes, and obscure or even obliterate color perceptions particularly red. In habitual drinkers these temporary effects frequently become chronic; in rare cases the optic nerve atrophies (Galezowski Uhthoff, Knapp and others).

Hearing. Specht has shown by experiments that drinking renders hearing less acute or less accurate.

Smell and Taste have been shown by the experiments of Kraepelin, Fröhlich and others to be considerably perverted or impaired by alcohol.

Touch and Muscular Sense, as Ridge, Lichterfels, Kramer and others have shown, may be greatly diminished or so increased that many distressing and painful sensations are felt in the skin.

2. **ALCOHOL AND THE NERVE FIBERS.** Observe the cut of healthy neuron and nerves and recall that it is by means of the near contact of their processes and nerves that the connections are supposed to be made with the other brain centres—that associations are possible. Note that Kleefeld's experiments showed that when alcohol was introduced into the circulation it produced almost instantly a retraction of the minute branches of the neurons, or at least a great number of them. Compare this condition with the similar one of trying to communicate with a number of persons on a telephone system after a storm has thrown down various sections of line and weakened some of the batteries. As we well know, large quantities of alcohol put the memory entirely out of commission for the time being.



HEALTHY BRAIN CELL FROM CORTEX.

The man who drinks once is likely to drink irregularly, and then to become a regular user. The illusion of increased ability and well-being leads him to think he is receiving benefit rather than harm. What effect would this course gradually produce upon these marvellously sensitive, microscopic nerves? Show the pictures of the damaged neuron explaining that it was taken from one who was a chronic alcoholic at the time of his death. Let it be noted that many of these processes were entirely destroyed and others were swollen and degraded. What of the voluntary attention necessary to good memory which such cells as these could order? of will power, and judgment for which such as these would be responsible? Moreover, these cells if entirely destroyed can never be replaced. Why may a reformed drunkard be weak in memory, judgment, self-control?

But thus far we have referred to the *constitution* of the nerves. What of their *tone*? Bring out the fact that the blood of the drinker is more or less impoverished, the circulation impaired, thus the cells lacking the necessary nutrition are in a state of lowered tension and work feebly.

3. **ALCOHOL AND THE CLEAR HEAD.** What is the effect of alcohol on the brain as whole, therefore on the mind? Show that recognition is the characteristic feature of memory and that upon which its trustworthiness depends. It is a purely psychic function and so cannot be demonstrated as others are, yet experience shows, as our knowledge of the toxic influence of alcohol would lead us to expect, that the drinker's memory is very untrustworthy. He does not recognize well. He thinks he has experienced things he has not and vice-versa,



BRAIN CELL INJURED BY ALCOHOL.

does not recognize familiar way and things. He is particularly likely to mistake time and space relations, often loses his way home.

"It is because the mind of the alcoholic is not able to function i. e., to be active, that he is not able to remember."

Purpose. To convince the youth's reason and thus furnish him a powerful motive for avoiding alcohol by showing (1) the preciousness of the memory as a basal faculty; (2) the way in which this function is discharged; (3) the extent to which it is impaired by alcohol; and (4) by pointing out the toxic effects of alcohol on the several processes to show the practical certainty that alcohol must to some extent impair and, in extreme cases, destroy, the memory.

References: "Control of Body and Mind," Gulick Hygiene Series; "Brain and Personality," by Dr. W. Hanna Thomson; chapters on Memory by Prof. James; "Psychology of Alcoholism," by G. B. Cutten, Ph. D.; "Alcohol and the Individual," by Dr. Henry Smith Williams, (Reprint from "McClures' ", price 5 cents).

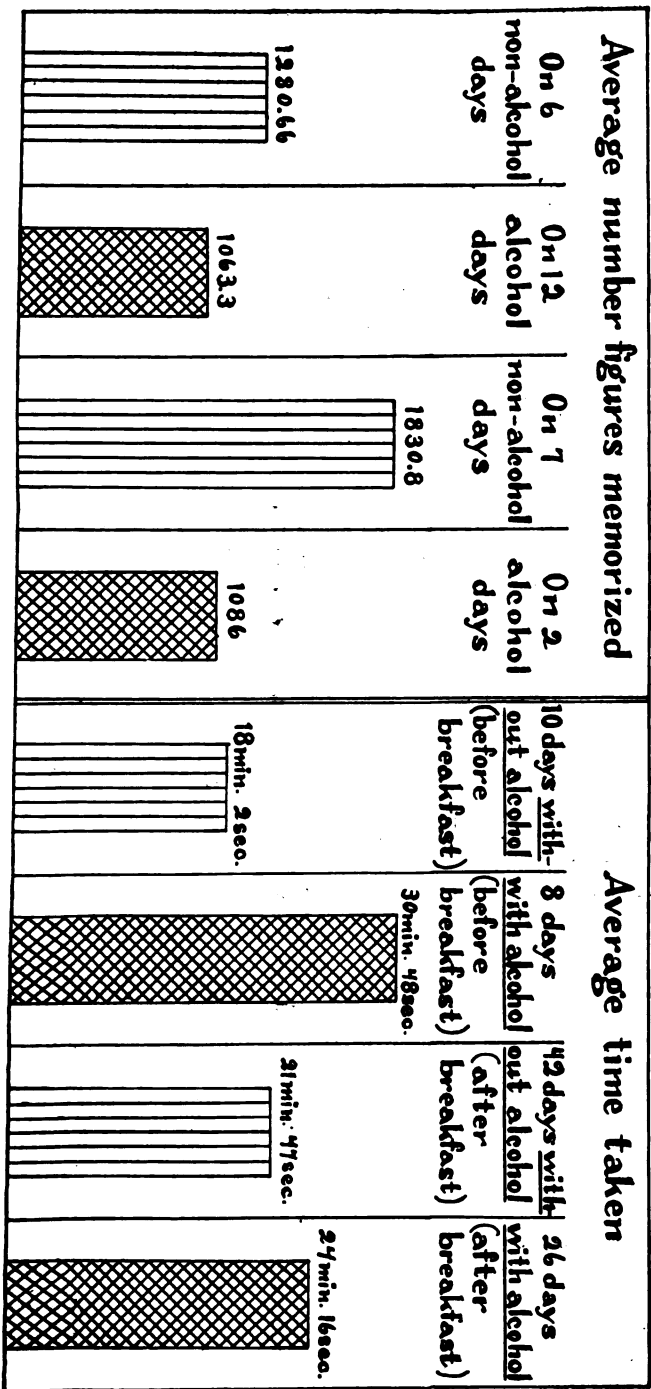
Effect of Alcohol on Memory

Decreased the amount of memorizing done in a given time.

[From experiments by Prof. A. Smith who practiced memorizing figures for 1-2 hour a day for 27 consecutive days.]

Prolonged the time required for a given amount of memorizing.

[From experiments by Prof. Vogt in memorizing 25 lines of the Odyssey.]



ANTI-TOBACCO HELPS

Cigaret Stereopticon Slides } For Sale
Anti-Tobacco Charts . . . }

Power of Tobacco Habit	each
Why the Cigaret is Especially Harmful	\$.20
Use of Tobacco	.05
Boy and the Cigaret	.05
Avoiding a Dangerous Blind Lead (18 pp.)	.05
(Best all-round Anti-Cig.-No. Journal.)	

April Anti-Narcotic Journal \$.50 a doz.

SPECIAL OFFER

SET OF SLIDES SUFFICIENT FOR ILLUSTRATED SCIENTIFIC TEMPERANCE LECTURE

Half the Slides Colored
Complete with Copyrighted Ms.

Only \$20 for All

SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull St., Boston

The Temperance Problem

Presented from the standpoint of

HEALTH, ECONOMICS, CIVICS

in a manner to

DISARM PREJUDICE, GRIP ATTENTION, CREATE ENTHUSIASM, ENCOURAGE ACTION

SPECIALLY DESIRABLE FOR

Labor Unions, Lyceums and Chautauquas, Societies of Christian Endeavor, Parental or Industrial Schools, No-License Campaigns, Public Temperance Meetings held in Churches or by Temperance Organizations, Social Welfare Workers and for High and Normal Schools and for Teachers' Meetings.

Trained Lecturers Available Lectures Illustrated if Desired

Send for full Particulars and Terms

SCIENTIFIC TEMPERANCE FEDERATION, 23 Trull St., Boston

REMARKABLE SPECIAL OFFERS

We have made arrangements with three publishers to make the following special offer for the next thirty days.

PICTORIAL REVIEW,	-	-	1 year, 12 issues, @ 15c. = \$1.80
MODERN PRISCILLA,	-	-	" " @ 10c. = 1.20
LADIES' WORLD,	-	-	" " @ 5c. = .60
SCIENTIFIC TEMPERANCE JOURNAL,	"	"	.60

Regular Price, \$4.20

 **Special Thirty-Day Price for All Four, - \$1.50**

PICTORIAL REVIEW The fashion pages of this magazine have won for it a circulation of over 600,000 copies monthly. Its styles and patterns are famous the world over. Ask your dressmaker. She knows. The special articles, fiction stories and household departments are timely and instructive reading for every woman who does her own thinking for herself. PICTORIAL REVIEW is a necessity in the economical management of the home and the wardrobe. You will get this magazine each month for one year.

MODERN PRISCILLA is recognized as the leading fancy-work magazine of America. It is to-day the undisputed authority on all kinds of embroidery, crochet, lace, lingerie and home decoration. There are several departments devoted to china, oil and water color painting, stenciling, pyrography leather work, basketry, etc. You will get this magazine each month for one year.

LADIES' WORLD is a thoroughly practical and up-to-date household magazine, and treats of every subject of interest to women and the home. Its household departments are as good as a course in Domestic Science. Its stories, verses and entertainments for children always please and interest. You will get this magazine each month for a year.

ALCOHOL AND THE HUMAN BODY

By Horsley and Sturge. Recognized as the most complete, reliable, interesting and valuable book on Alcohol and Human life, health, efficiency, morality, and heredity, yet published. 370 pages; 16 beautiful plates; 21 diagrams.

SCIENTIFIC TEMPERANCE JOURNAL

Packed full every month of readable, up-to-date, carefully stated facts about alcoholic drinks and narcotics gathered from scientists and scientific papers all over the world. Specially helpful to teachers and church, S. S. and social workers.

Send for other special club rates of the JOURNAL with magazines and helpful books.

Send Your Order at Once—NOW
Before You Forget it—to

SCIENTIFIC TEMPERANCE JOURNAL, Boston, Mass.

BOTH for

a

DOLLAR BILL

(till June 1, 1911).

SCIENTIFIC TEMPERANCE JOURNAL

— *Continuing the* —
SCHOOL PHYSIOLOGY JOURNAL

Kingdoms

By Charles Buxton Going

KINGS of a hundred *Dreadnaughts*, ruling the Seven Seas—
Parked artillery, powder and steel—shall ye endure by these
Keeping an armèd lordship of earth whereso your sentries stand?
What are Akkad and Assur now? Shards, in the drifting sand.

Kings of a thousand forges, kings of ten thousand men,
Liner and limited, shuttlewise thrown, from port unto seaport again,
Weaving a web of infinite threads, giants of hand and of brain—
Where are the galleys Phoenicia sailed? Ooze in a desolate main.

Kings of the soul's out-searchings, kings of the far ideal—
Poets, philosophers, prophets—the Christ—lifting men nearer the Real—
Not unto dust as the war lords go, not as the lords of greed,
But rising forever from life to life—kings and Messiahs indeed!

—*Cosmopolitan.*

Published at—
BOSTON, MASS.

JUNE, 1911

New Century Series

—OF—

Anatomy, Physiology and Hygiene

Five Books

The NEW CENTURY SERIES OF PHYSIOLOGIES was prepared under the supervision of the Text-Book Committee of the Advisory Board of the Woman's Christian Temperance Union. The Series has been heartily indorsed by representative teachers as well as by the Union for the systematic gradation of its subject matter; for its adaptability to the different classes of pupils in all the grades from the primary to and including the first years of the high school; and for the fulness and accuracy of the treatment in regard to the nature and effects of alcoholic drinks and other narcotics on the human system.

Send for Descriptive Circular.

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston

Total Abstainers

Through Classification

may receive equity in premium cost with an old line, legal reserve life insurance company

It will obligate you only the cost of a Postage Stamp to know about it

Our low premium Perfection Endowment and Monthly Income policies protect every contingency.

Write to-day—give your age

Do you want a position ?

We want to increase our agency force. Write now. Address

TOTAL ABSTINENCE DEPARTMENT

Security Mutual Life Insurance Co.

Binghamton, N. Y.

Scientific Temperance Literature

	per 100	each
Facts Concerning Alcohol	.15	
Drink and the Doctor's Bill	.15	
Sinning Against the Unborn	.15	
The Causes of Alcoholism	.15	
Alcohol and the Death-Rate	.15	
Alcoholism and Tuberculosis	.35	
Effects of Alcohol on School Children	.35	
Alcohol and Degeneration (colored chart)	.65	
Alcoholism in Wine-growing Countries	.30	
Wine to Drive out Drunkenness	.30	
Wine a Peril to Childhood	.30	
False Claims for Wine	.35	
Plain Facts About Beer	.40	
Dangers in the Use of Beer (20 pp.)	.05	2.50
Alcohol and the Individual (Dr. H. S. Williams)		\$.05
London Congress Report		.10
International Course of Study in Hygiene and Temperance (per doz., \$.50)		.05
"Teacher's Helps" Packages		\$.10; \$.15; \$.25
"Distribution Packages"		
400 leaflets \$1.00. Order as "Package No. 1" or "Package No. 2." Each contains simply stated practical facts about alcoholic drinks. Just what you want to create really intelligent temperance sentiment in your community.		
Package No. 1, 50 leaflets each of 8 different kinds.		
Package No. 2, 100 leaflets each of four different kinds.		

NEW CHART SERIES

WHAT YOU HAVE BEEN ASKING FOR

Inexpensive reproduction of the large charts. Use them in Day and Sunday Schools. Set people thinking by displaying them in Shop Windows, Manufactories, Stores, on Bill Boards, etc.
Six of the series now ready, others to follow.

- No. 1—"Comparative Sickness of Drinkers and Abstainers" (see Dec. *Journal*.)
- No. 2—"Employers Who Prefer Non-Alcoholized Workmen" (see Jan. *Journal*.)
- No. 3—"Tuberculosis and Nervous Diseases in the Children of Drinkers" (see Feb. *Journal*.)
- No. 4—"A 62-Mile Walking Match Between Abstainers and Moderate Drinkers" (see March *Journal*.)
- No. 5—"Smoking as a Handicap" (see April *Journal*.)
- No. 7—"Effects of Alcohol on Memory" (see May *Journal*.)
- No. 8—"Moderate Drinking and the Death Rate" (see back inside cover.)

Handsomely printed in red on coated paper; size 9x13 in.

Each, \$.05

Trial Order (5), only \$.15

Per Dozen, \$.25

"TEACHERS' EVERYDAY PLANS, for autumn, winter and spring, is one of the choicest and most discriminating compilations of "ready-to-use" material we have seen. It includes stories, helps in drawing, language, history, biography, nature study, busy work, etc., something helpful for every day. 412 pp. in set. Price, paper, \$1.00; cloth, \$1.50. F. A. Owen Pub. Co., Dansville, N. Y.

MEDICAL CONFLICT

Little Johnny's father is a physician and his mother is a Christian Scientist. Recently the little boy was threatened with appendicitis. His sister, going into the room where Johnny was in bed, found a very indignant little boy, who made this complaint:
"Father and mother won't let me talk slang, but when I tell mother how sick I was she said 'Forget it,' and when I told father he said 'Cut it out'."—*Judge*.

Scientific Temperance Journal

Vol. XX

BOSTON, JUNE, 1911

No. 10

Divine Statecraft

IT is a fine thing to help an individual man or woman, but it is divine statecraft to build up a good custom or break down a bad one that shall control the actions of men long after individuals are forgotten—*Amos P. Wilder, Consul-General, Shanghai, China.*



Alcohol as a Remedial Agent

BY DR. HARVEY N. WILEY

Chief of Bureau of Chemistry, U. S. Department of Agriculture

A BITTER controversy has been raised over the question "Is alcohol a food?" It has been shown by Atwater and his assistants at Middletown that the average adult human organism is able to oxidize with practical completeness a considerable quantity of alcohol per day. This quantity of course varies in different individuals but may be taken pretty accurately at about three ounces of alcohol per day for each person. This quantity must be distributed over different periods of the day, as to take it all at once would not only defeat the purpose of the experiment but in most cases would probably produce actual intoxication.

I think there is a marked tendency in the medical profession to regard the virtues of alcohol as very questionable. The old idea that if one is going to expose himself to extreme danger or extremes of climatic conditions, the body should be fortified by the use of alcohol has disappeared. It is quite certain now that the taking of alcohol does not make one any less apt to freeze, but more so, and it does not give any such quantity of energy as to be at all compensatory for the injury it may otherwise produce.

I have stated on the witness stand in answer to a question that I considered alcohol to be a food because a certain quantity of it is burned in the body and results in the production of heat and energy. In the light of the investigations which have been made from theoretical conditions, I am inclined to the opinion that the effort to rid the body of alcohol, even in the limited quantities I have mentioned, perhaps consumes a great deal more energy than is furnished by its combustion, and that upon the whole, alcohol can not be regarded as a food even in the limited sense above de-

scribed. It is, without question, a substance which does not nourish the body, build tissue, or repair waste, and it is quite likely that its value either as a food or medicine has been greatly overestimated. . . .

The action of the German Emperor in calling attention to the abuses incident to the consumption of alcohol has led to a wider discussion of this problem in many circles and the effect of alcohol upon the children of Bavaria particularly has been cited as an instance of its harmful effects, especially when offered to and consumed by those of tender years. The German Emperor now permits his health to be drunk in a glass of water, and this it is claimed will be a great stimulus looking towards the restriction of alcohol drinking in the German army. The susceptibility to certain diseases of persons addicted to alcohol has been noted by many writers. Apparently, persons using alcohol, especially if using it constantly, or to some excess, are more obnoxious to solar radiation than those of abstemious habits. The records of death by sunstroke indicate that a very large percentage of those who suffer from it are addicted to the use of alcohol.

Dr. Reid Hunt, in his study of the effect of nitrils on small animals, found that mice which had previously been given alcohol were much more susceptible to poisonous influences than those which had not. The tendency which the alcohol undoubtedly has to weaken the bodily resistance is not a matter to be left out of consideration.

The general result of the study of this problem has been an accelerated movement to restrict or limit the use of alcohol in medical practice and especially in hospitals. A few years ago some alcoholic beverage was regarded as necessary in the treatment and elimination of the causes of disease. At

*From the "President's Address" Amer. Therapeutical Society, Boston, May 11, 1811.

the present time, the use of alcohol in any form as a food product is extremely restricted. The idea that alcohol stimulates mental effort and produces facility of expression is rapidly disappearing. It is doubtful whether a single brilliant thought or poetic or elegant expression has ever owed its origin to alcohol in any form. It is true that alcohol seems to take the bridle off the tongue and give free rein to conversation but this effect is produced by a paralysing influence on the sense of responsibility rather than a stimulating influ-

ence upon the general flow of ideas. Alcohol undoubtedly relieves the individual under its influence from his sense of responsibility as a moral agent and permits a freer expression of ideas, even if they are not so good as those which would be expressed with more reluctance when in a normal state. Both as a means of prevention of disease and as a remedy for disease alcohol is rapidly falling into disrepute and bids fair to become a mere memory in the *Materia Medica* and in the *Pharmacopoeia*.

The Real Culprit in Lead Poisoning

IN France a few years ago the question of protection of painters from lead poisoning came up as a subject demanding legislation. It was thought that dealers must either be prohibited from selling certain preparations of lead or be placed under precise restrictions.

A recent article by Dr. George Petit in *Les Annales Antialcoolique* (April, 1911) reviews the discussion of the subject and the evidence collected at the time the question was being agitated for legislation (1905). Beside an official investigation made by a commission appointed by the Senate, another was conducted by a writer for the *Medical Bulletin*. This writer, M. Janicot, sent a letter of inquiry to the contracting painters of the country and received replies from 6,750 professionals. These filled seventeen volumes which were submitted to the senatorial commission.

These replies furnish, he believes, circumstantial evidence as to the real, or chief culprit in lead poisoning. The testimony of the painters themselves is quoted.

Th. C., labor-contractor, 72 years of age, had used white lead fifty-seven years, often handling it with his hands without ever being injured by it, but he remarked that he had always been sober, had never smoked, and always washed thoroughly before eating.

M. E. M., contractor, father and sons all professionals, had used white lead for many years, often handling it with their hands, and not one had ever suffered any inconvenience from it. The father, eighty-three years of age, had been engaged on some of the most important buildings of Paris and was still in full possession of all his faculties. Uncles and cousins of the contractor were in the business and had never had any trouble nor had he himself, though he had been engaged in painting since 1857. But he and his predecessors had observed that the men attacked by lead

poisoning were those who neglected the rules of common propriety (personal cleanliness) and were addicted to alcohol.

M. L., contractor, was attacked by lead colic at the beginning of his apprenticeship; consulted three physicians to know if he must give up painting. Two said yes. The third, a renowned physician of Valenciennes, (M. Lecerf) said, No, but that he must invariably observe three rules; (1) wash his hands before eating, (2) wear proper clothing (protective) and (3) not smoke.

M. H. L., a labor-contractor, declared that the causes of painters' troubles are smoking and making cigarets while their hands are soiled with paint, and, addiction to alcohol.

Another contractor said: Today when all the colors are mixed mechanically the danger is *nil*. It would be more hygienic to suppress alcohol and tobacco.

Another said: No workman who is careful and sober ever has lead colic.

A Normandy firm said: The cause of trouble is alcoholism and lack of hygiene.

Another firm had never known any but alcoholic workmen to be poisoned, and attributed the poisoning more to drink than to handling the lead. . . .

It was shown by the investigation that the frequency of lead-poisoning in painters decreased with their distance from large cities, or more precisely, from the drinking places of large cities, which are the real culprits.

The conclusion from all the evidence collected was that the way to protect the health of the workmen was not to place restrictions upon the paint dealers as to what products they might or might not sell, but to insist on personal cleanliness and suppress the real contributing causes of the trouble, the use of tobacco and alcohol by the workmen.—Translated for the SCIENTIFIC TEMPERANCE JOURNAL.

The Drain upon Sick Benefit Societies

BY U. F. MUELLER, C. PP. S., CARTHAGENA, OHIO

TODAY we can state it as an incontestable truth that the immoderate use of alcohol by our laboring men fastens upon sick and accident insurance an unduly heavy burden. We have found alcohol to cause and aggravate many diseases and accidents which bring on premature death and much temporary incapacity to earn. No less is it a principal contributory cause in many diseases leading to early invalidism."

This emphatic declaration (1908) by Dr. Hansen of Keil, Imperial Councillor and Director of the German Board of Insurance points to a long and costly lesson of experience, the full figures of which are probably even yet not complete. Kulhanek, for example, quotes a case of a brewery laborer, 42 years old, for thirteen years a member of an insurance society, who paid in assessments \$91.93; he drew, for 779 days of sickness, benefit amounting to \$271.66, a deficit of \$179.73. The man was an ordinary heavy beer-drinker.

The case may seem somewhat extreme, yet every insurance society that has a large number of heavy drinkers faces extraordinary expenditures for them. This is clear from a report of the Austrian Secretary of the interior covering the years 1891-1895, and comparing the average number of days that laborers in the alcohol industry were sick with the general average of all other laborers. The time lost by general laborers averaged, for the various age groups, 8.8 days; for laborers in the alcohol industry the time lost was 10.3 days. The difference may seem small, but in the aggregate it amounted to an additional loss for alcohol industry laborers of 30,000 days costing \$12,000 in benefit insurance.

BEER DRINKERS ALSO INCREASED SICKNESS RATE

BUT it might be thought that it is the whisky drinkers who thus swell the sick-benefit budget of the alcohol industry laborers. Dr. Welminsky examined the cases of 520 drinkers who used either whisky or whisky and beer, and of 483 persons who used only light Bohemian beer (3 per cent. alcohol) although some of them indulged rather freely. Comparing the cases of a long list of diseases traceable wholly or partly to alcohol, he found 129 among the whisky drinkers and 327 among the beer drinkers.

In German cities where insurance is obligatory the sick rate among brewery employees and certain classes of workmen known to be

generally heavy drinkers greatly exceeded the general average.

The Leipsig local society carried its studies further. Without going into all the statistics, it may be said that the investigation showed (1) that the heavy drinkers were subject to sickness two or three times oftener than the general class; (2) that they were incapacitated for work from 1.5 to 2.5 times more than the general average; (3) that their mortality rate was much higher than that of their more temperate companions.

THE BURDEN OF INVALIDISM

NOR was this all. The Leipsig investigators classified the duration of incapacity for work into three groups of 3, 6, and 8 months each. They found that of every 1,000 persons observed, the average sickness at all ages in the three groups was as follows:

	3 months	6 months	8 months
General class	9.4	4.4	5.4
Drinkers	36.7	6.0	10.1

These figures speak for themselves and testify that the ways of the transgressor against the natural laws are fraught with misery. Can the momentary alleviation of pain or painful surroundings outweigh a three to eight-months' lingering disease, not to speak of doctor's bills, etc.?

TRADES, DRINK BILLS, AND SICKNESS RATE

DR. HUGO DEUTSCH, consulting physician of the General Workingmen's Sick Relief Insurance Society at Bruenn, Austria, grouped his statistics according to the average drink bill of the insured, as follows:

I. Metal workers spending 10.1 per cent. of weekly wages for drink; II. typesetters spending 8.7 per cent.; III. other trades spending 4.8 per cent.; and IV. textile workers spending 4.8 per cent. of weekly wages for drink.

Examination of ten years' records showed that time lost from sickness and accidents closely paralleled the difference in the expenditure for drink.

The strict parallelism is but twice broken, once in accidents where typesetters had the smallest rate since they are not much exposed to accident, and once in consumption to which typesetters were especially exposed and where they had the highest sickness rate.

Science which twenty-five years ago began merely to warn against immoderate use of alcoholic beverages has progressed. Scientific researches have shown that alcohol not only

in large quantities but even in small doses is dangerous. In fact, science can not assign any definite dose small enough to be declared harmless for everybody. It may be that such a dose exists, but it varies with the individual's

predisposition. The less one takes, the better are his chances for a long and healthful life.

The abstainer is a man who desires to avoid even the least chance of being poisoned by alcohol.

New Studies of the Relation between Alcohol and Resistance to Tuberculosis*

THE normal resistance of the body against tuberculosis appears to lie more in ability to prevent the germs from finding a lodgment than in ability to combat them when they have begun to attack the tissues. When once they have obtained a foothold, the method of resistance appears to be more successfully directed to walling them in and preventing their spread, than attempting to actually kill them, as is the method with other germs.

A series of experiments has recently been reported from the laboratory of Prof. Weichselbaum, in the University of Vienna,* which sought information as to the influence of alcohol upon the course of the disease after it has been implanted. The animals were directly inoculated with the germs of tuberculosis, so there was no question of preventing the entrance of the germs, but of the length of time the body could hold out against them.

The experiments were conducted by Dr. Walter Kern, who followed in general the method of Prof. Laitinen, except that Dr. Kern used guinea pigs exclusively, and took particular care to use for "controls", or comparison animals from the same parents, and, where possible, from the same litter. The special "control" of each alcoholized animal was confined in an adjoining pen, so that all other conditions except the alcohol administration might be practically identical. Wherever slight differences in weight could not be avoided, the advantage was usually given to the animal that was to receive alcohol, the lighter one being taken for the "control."

Three classes of doses were decided upon—small, medium and large.

The "medium" dose given was always the same. The "large" and "small" doses varied with the weight of the animal. The alcohol given in the "small" dose proportioned to body weight was equivalent to what a man weighing 150 pounds would get in one eight-ounce glass of $3\frac{1}{2}$ per cent. beer a day. The "large" doses, which also varied with the weight of the animal, corresponded to $4\frac{1}{2}$ eight-ounces glasses of $3\frac{1}{2}$ per cent. beer daily for the full-grown man.

*Zeitschrift für Hygiene und Infektionskrankheiten, 1910.

The accompanying table shows the number of days each class of animals lived after infection in each series of experiments. Two series of experiments (indicated by Roman numerals) were to have been performed in each group but there were so many fatalities in the large dose group that only one series could be carried through in that.

	Small doses		Medium doses		Large doses
	I	II	I	II	
Non-Alcohol	65 days	145	57	81	143
Alcoholized	58 "	122	36	57	109
	7	23	21	24	34

THE RESULTS OF ACCIDENTAL PNEUMONIA

As in the experiments of Prof. Hodge, an accidental sickness occurred among the animals which helped the general purposes of the inquiry, though in Dr. Kern's case it resulted in the death of so many of the animals that it interfered with the full scope of the experiments, as he had planned them.

Pneumonia broke out among the guinea pigs. The following table tells at a glance the story of results.

	DEATHS FROM PNEUMONIA		Large dose group
	Small dose group	Medium dose group	
Alcoholized	33 p. c.	30 p. c.	65 p. c.
Non-Alcohol	16 "	none	7 "

THE HEREDITARY EFFECTS

DR. KERN also kept a record of the health and vitality of the progeny of the normal and the alcoholized guinea-pigs. From the ninety alcoholized animals he obtained 23 young, from the normal 17. Shortly after birth or later from accidental disease, chiefly pneumonia, 65 per cent. of the young of the alcoholized animals died and 52 per cent. of the young of the normal animals.

SUMMARY OF CONCLUSIONS

I. ALCOHOL, even in small doses, steadily lowers the body's power of resistance. It makes it more susceptible to infection in general. It hastens the fatal termination when infected with tuberculosis.

II. Alcohol exerts an injurious effect upon the offspring. It diminishes ability to live. It has an unfavorable influence upon the course of tuberculosis infection.—Translated for the SCIENTIFIC TEMPERANCE JOURNAL.

Alcohol and Length of Life

ABOUT seventy years ago a young man in England wished to insure his life and applied to a London Company for a policy. When it was learned that he did not drink liquor he was told that he must pay an extra premium, as it was then believed that a little whisky or wine was healthful, and that a man who did not drink would not live as long as one who did. The young man did not think the company was right, so he formed a company which insured only persons who did not drink. This was the United Kingdom Temperance and General Provident Institution. For ten years this company insured only persons who did not drink. Then it opened a new department which insured those who drank a little. Even these were carefully chosen as to health and the amount they drank.

The company was in this way able to watch for more than sixty years and see which of their policy holders died the earlier—those who drank or those who did not drink. They found that among those who drank there were many more deaths in proportion than there were among those who did not drink. Among the policy holders in the prime of life, that is, among those between forty and fifty years of age, the proportionate number of deaths among drinkers was even greater than among those of all ages.

Look at the first section of the illustration (page 148a) and you will see the experience of the United Kingdom Temperance and General Provident Institution for forty years. It was found that out of every 100 deaths expected among the drinkers, 93 deaths actually occurred, while among those who did not drink, only 70 out of every 100 expected deaths occurred. The experience of another company, The Sceptre Life Insurance Company (section 2 of illustration) shows a better record still for the policy holders who did not drink as compared with drinkers. The members of that company, however, were all chosen through religious bodies, the company thinking that people who led good and religious lives lived longer, and this proved to be true from the experience of the company.

Similar results have been obtained by other British societies. A Canadian company, which recently established a department for insuring only those who did not drink, found, by a five years' experience ending in 1909, that the number of deaths in the new department was only a little over one-half of the number of the older department.

Dr. Ekhrens of the Swedish Life Insurance

Company recently furnished evidence which agreed with that of the English companies. He found that drinkers under forty-three years of age came two per cent. nearer the death rate than non-drinkers at the corresponding ages. For those over forty-three he found that the drinkers came 26 per cent. nearer the expected death-rate, which again indicates that the heaviest damage done by alcohol occurs during the years of greatest ability—at the age from forty to sixty years of age.

An interesting study was made in Chicago in 1909 of all the deaths of men of sixty years and over occurring in the one month of April. The results were what was to have been expected from the experience of the insurance companies. Of the 175 deaths of men over sixty years of age information as to their drink habit was obtained in 152 cases: 73 did not drink; 75 were moderate drinkers; 4 were heavy drinkers. The drinkers on the average had reached the age of 68 years, but those who did not drink passed the three score and ten mark, reaching over 72 years, or four years more than the drinkers. Figures for the age of forty-five and over would probably have shown a larger difference because of the heavier death-rate in drinkers between forty and sixty. None of the heavy drinkers had reached the age of eighty, but 19 who did not drink and 8 moderate drinkers had passed it.

ALCOHOL AND ITS INFLUENCES ON FATAL DISEASES

It is as yet quite impossible, in the United States at least, to tell just how many deaths are brought about, directly or indirectly by alcohol. Especially is this true in trying to determine the number of cases of deaths from diseases promoted by alcohol. In Switzerland provision is made for learning these facts, and the records of that country throw some light on the subject.

Dr. Rudolph Pfister made a study of the records of the city of Basle for the years 1892-1906, finding the percentage of deaths in which alcohol had been reported by the attending physician as one cause of death. He found that 18.1 per cent. of all deaths of men between 40 and 50 years of age were caused, in part at least, by alcohol, and this at what should be the most active period in a man's life, the time when he is most needed by his family and community. Taking all ages between 20 and 80, he found that alcohol was one cause of death in one man in every ten who died.

Another study was made by a certain doctor in Sweden, from records of 1,082 deaths oc-

curing in his own practice and the local hospital. No case was counted as alcoholic of which there was the slightest doubt. Of deaths of adult men, 18 in every 100 were due, directly or indirectly, to alcoholism. In middle life between the ages of 40 and 50, 29; and between 50 and 60 years of age, 25.6 out of every 100 deaths had alcohol as one cause, thus agreeing with other statistics we have been quoting.

The Medical Man and the Alcohol Question*

BY PROF. G. SIMS WOODHEAD, A. M., M. D.,
F. R. S. E.

Professor of Pathology, University of Cambridge

AMONG the agents which produce degeneration of tissue, alcohol may be characterized as the most prominent of all, it having an especial action on the most highly developed tissues of the human body. The nerve cells and the cells of the secretory organs are specially affected, causing an alteration in the secretions and a departure from the physiological normal nearly akin to the pathological. The effect of alcohol is to divert function and to cause alteration of structure which has a constant tendency to become permanent.

The action of alcohol on the lipoids is similar to that of poisons like chloroform and ether, which dissolves lipoids and are, therefore, ranked as paralyzing substances. Meyer has spoken of the lipoids as the insulators of nerve-fibres, and when these are destroyed a system of "short-circuiting" is produced.

Much has been made of the normal presence of alcohol in young growing tissue but alcohol is not easily produced from milk sugar and the growing tissues of the child are not affected by the extremely small physiological production of alcohol in the system.

Speaking of the action of alcohol on the liver, he said that this organ, which dealt with many poisons is unable to deal effectually with alcohol and, therefore, suffers from its introduction. A cloudy swelling of the liver-cells, which is produced by ether and some metals, indicates an over-use of the organ. This is specially the case with alcohol. Over-use of the liver-cells and too frequent stimulation unfits them for their proper function, and fatty degeneration and loss of function results.

He referred to the responsibility of medical men in prescribing alcohol—the prescription is always remembered though the occasion is

*Substance of the president's address at the annual meeting of the Cardiff Branch of the British Medical Temperance Association, University College, Cardiff.

forgotten—and quoted Sir Victor Horsley's story of the doctor who prescribed alcohol, and the patient still continued the medicine, though the doctor had been dead twelve years. He addressed a warning to the coming generation of medical men as to the care necessary in prescribing alcohol with scientific exactitude, the same as they would any other powerful poison.

He showed how the statistics of the London Temperance Hospital had demonstrated that results at least as good, if not better, than the ordinary hospital results have been obtained without the use of alcohol. Referring to the effect of alcohol in fevers he asserted that people recover because they have developed antibodies and immunity is produced; alcohol interferes with this production of immunity as has been shown experimentally in animals in cases of hydrophobia, tetanus and anthrax, and its administration is therefore undesirable.—Reported in the *British Medical Temperance Review*.

A Wife's Confession

MAKE no mistake in reading the following little confession of what I would like to tell my husband. My desire to tell him certain things about himself which affect our mutual life is by no means born of spite or anger. Indeed it is rather born of a great love which would have perfection in the beloved object.

If I dared "speak out in meeting" here are some of the things I'd say to my husband:

I would tell him that woman are peculiarly susceptible to odors; that they are in a measure, a determining force in their lives. To me, for instance, there is nothing quite so repulsive as the nauseating fumes of stale tobacco smoke. Some men can smoke and smoke and be nearly free from all taint of it, while others seem to give it forth from their very pores. I would tell my husband very gently that he is one of the latter, and that there are times when I feel like opening all the windows in the room in which we are sitting.

I would tell him that women are peculiarly fingers wretchedly stained by nicotine and suggest that he put them through a thorough cleansing with peroxide and powdered pumice. When he was courting me he did not smoke in my presence except once in a great while, but now I must worship him, not through clouds of incense, but through those of cigaret or pipe smoke or not at all.

(Continued on page 143)

Scientific Temperance Journal

Founded by Mary H. Hunt

Single Subscription.....\$0.60 a year

CLUB RATES

Clubs from 5 to 50.....\$0.50 each

Clubs of 50 and over......40 each

Foreign and Canadian postage \$.10 additional.

Please remit by post office or express money order, draft on New York or Boston, or by registered letter.

CORA FRANCES STODDARD, A. B., EDITOR

EDITH M. WILLS, Assistant Editor

E. L. TRANSEAU, Contributing Editor

Published monthly at 23 Trull St., Boston, Mass.

By The Scientific Temperance Federation

SEPTEMBER TO JUNE, INCLUSIVE

Copyright, 1911, Scientific Temperance Federation, Boston.

Entered as second class matter June 1, 1909, at the postoffice at Boston, Mass., under the Act of March 3, 1879.

Editorial Responsibility in Social Education

THE popular magazines are doing valuable work in rousing public conscience on many matters. Among others, the alcohol question in recent years has frequently received fair and enlightening treatment. The great majority of these magazines now exclude advertisements of alcoholic beverages. Occasionally the fiction incidentally reflects a changing public opinion in regard to the use of these drinks. But the editorial departments on the whole seem not to have progressed as rapidly in this respect as the advertising departments. While it is to be readily admitted that drinking customs still occupy too large a part in actual social life, it is fair to ask the editors and publishers of these magazines whether the time has not now come to omit representations of it from their fiction where they exert a sub-conscious but definite influence on the reader directly against the current of other influences tending to promote sobriety. As a matter of fact, would the average reader miss such allusions from the story?

The latest issue of one magazine which is declaiming with considerable vehemence against certain cases of individual and political culpability contains eight stories. Two relate to children. Of the other six, four depict their characters as drinking, some occasionally, some politely, some with a sneer at comparative abstemiousness, some grossly, all as a matter of course. Illustrations show both drinking and smoking. In no case would the omission of the drinking reference have interfered in the slightest degree with the realistic or literary qualities of the tale. Their inclusion carries over into the minds of the young readers of a new generation the social standards of a passing day, standards now becoming

increasingly recognized as subversive of health, efficiency and social usefulness.

Protest helped clear the advertising columns of liquor advertisements. Protest is needed right now against this further subtle perpetuation of social ideals which science and experience have shown conflict with society's best welfare.

What Life Insurance Says

By EUGENE L. FISK, M. D.

Medical Director Provident Savings Life Assurance Society of New York

IN recent years all life insurance companies have discriminated against the steady tippler and the periodical free drinker. As intemperate risks have usually been excluded, even for substandard or rated-up policies, there are no comprehensive statistics on this class. We do know, however, from the collective experience of thirty-three life insurance companies, extending over a period of thirty years, that accepted risks giving a history of former intemperance show a very high rate of mortality, about 36 per cent. above the normal average. As such risks are always critically examined before acceptance, the high mortality of this class, notwithstanding the precautions taken, should serve as a warning to those who think they can over-indulge in alcohol with impunity over a period of years, and then look forward to a quiet and healthy old age.—*Sunday School Times*.

(Concluded from page 142.)

Then I would tell him that I can not help but think of the cost of this habit of his. On Monday I put the remainder of Sunday's roast through the meat chopper in order to save a trifle on the weekly butcher's bill, and after eating my croquettes or meat loaf, Milord sits in the parlor and sends several times my small savings forth into smoke.

"Yes," and you buy candy and soda in place of my cigarets," I can hear him say if I dared tax him with this, but I would tell him that if he would promise to smoke only the value of what I spend weekly in these little luxuries I would be altogether content, for if I, or any other woman, ate as many sweets as our husbands' tobacco money would pay for, we would have a ruined stomach and complexion. It is not that I wish to deprive my husband of the chief masculine comfort, but I do think he is selfish and extravagant about it, and that it has become an unclean and injurious habit with him. I don't tell him all this, however; I grin and bear it.—*The Delineator*.

Class-Room Helps

Conducted by Edith M. Mills

The Value of A Life and How Best to Spend It

FOR ADVANCED GRAMMAR GRADES

Purpose. To appeal to the boy's reason and his sense of the heroic, to show him the value of his life and health and then to show the unwisdom of trading life and its opportunities for so little—to make such a poor bargain; and to show further that while comparatively few cases so extreme as this occur, yet the chance is great enough to make it unwise to take it, and in less extreme cases there is more or less of suffering and loss.

THE ECONOMIC VALUE OF A BOY'S LIFE

WHAT is the allotted span of life? The boy has about fifty years to live after he is of age. If, as is probable, he no more than supports himself after he is sixty, then he has forty years in which to work for himself. The average annual wage of a man having only a grammar school education is, say, \$400; of a high school graduate about \$600; and of the graduate of a college or technical school about \$1,000. Let the boys reckon the value of the life at each price for the forty working years. From a money point of view the boy's life is a very valuable one.

Note, however, that this supposes continuous health and unimpaired mentality. If these are impaired, earning fall off. What is always the tendency of the effects of alcohol and tobacco on health?

THE VALUE OF A BOY'S LIFE AS A POTENTIAL PARENT

THIS is a side of life values that probably never occurs to the boy and yet it may well be brought to his attention. Ask the boys to consider the value of their own fathers, each the parent of one, two or more sound children who in their turn are to become good citizens and add to the wealth, the liberty and the opportunity of the country. The value of each father may be better comprehended by supposing that the bread-winner, the defender, the joint guardian and trainer of the children be taken away. Perhaps in no way is a man's life of more value.

THE VALUE OF A BOY'S LIFE TO HIS COUNTRY

His economic value is equal as we saw to the earning power of \$12,000 annually at 5 per cent. interest.

What is the good citizen worth in times of peace? Contrast with the law-breaker, the drunkard, the one whose life exerts an evil influence, or with a murderer, will readily show

that every man who "pulls his weight" in the ship of state is of real value.

What is he worth as a defender in time of war? Let the boys recall the days of the Revolution and of the Rebellion, and other crises in our national history and realize how the fate of the nation hangs on its citizen-soldiers. Just an ordinary citizen then, is a wealth-producer, a defender of his country in time of war, a constructive helper in times of peace.

THE POTENTIAL VALUE OF THE BOY'S LIFE IN GENERAL LINES

BUT these measure only a part of the great potentialities of a boy's life. He may be useful or distinguished in a thousand ways. His possible value as an inventor may be measured by an Edison or a Wright; as a statesman by a Roosevelt; as a patriot by a Washington; as an emancipator, by a Lincoln, etc.

Perhaps not one of these or a hundred other great men showed in boyhood any remarkable qualities. Any group of boys may contain a great man. Certainly it contains those who can and will excel and be eminently useful. None, least of all himself, must dare to spoil a boy; his possibilities are too wonderful.

WHAT IS LIFE WORTH TO THE BOY HIMSELF

WHAT is even a year of healthy existence, life, worth? Judge by the price men are willing to pay. It is common for men to undergo fearful suffering or to cheerfully give an organ, a hand or a limb that life may be prolonged even for a time, or for others to endure the most fearful hardships on land and sea in order that life may be sustained. Nothing would tempt a boy to sell just one year of his life. What then, are forty years of vigorous health and active life worth?

But there are things far dearer than mere existence, valuable as that is. What is freedom worth? Let consideration of the lives of Africans held as slaves answer. Imagine what it would be to be deprived of liberty, the pursuit of happiness, the power over one's own body, actions and activities. What have Patrick Henry and ten thousand other patriots said liberty was worth? Suppose you were offered money or anything valuable in the world you could ask for your life and health and liberty, can you imagine anything that

you would take in exchange for them?

If then, life and liberty are unspeakably valuable surely we shall think well before letting them go for little or nothing.

A POOR BARGAIN

HAVE the true story of the smoking college man (p. 146) read by the boys, each reading a paragraph. Bring out the main facts in two parts as indicated below, first writing upon the black-board the items under "Investment." Suppose that each of you were similarly blessed, what would you sell out the entire holdings for?

Next take up the first installment under "Returns." He possibly saved himself a little embarrassment and gained a little popularity. (How high should one rate the value of a popularity with the faster set of a college?) At first he had some pleasures while using the tobacco. There was as yet not much fear of trouble ahead. Admit freely all the possible advantages or pleasures. But even at that stage when one considers the forming of what is admitted to be an unclean, unhygienic, enslaving, and expensive habit, did he really make a very good bargain?

Take up the second installment, writing the "Returns" as developed opposite the "Investment." There may be a little discussion of how one thing grew out of the other.

INVESTMENT

Good Family
Wealth
Ability
Perfect health
Freedom from vice-slavery
Parents' Satisfaction
College Education
Opportunity
Probability of fifty years of life

RETURNS

1st Installment
Counted with "good fellows"
Had some sense-pleasure
(nerves narcotized)
2nd Installment
Strain of work felt unduly
Heavy expense
Craving leads to drink, gambling, sin
Vice-slavery absolute
Shattered nerves
Painful and lingering disease
Fifty years of life lost

Who would care to make a similar bargain?

But, you say, not one in a hundred has to pay such a price. Fortunately that is true, but who would take even one chance in a hundred to contract typhoid fever, small-pox, diphtheria, or any other dangerous disease? Perhaps not more than one in ten of those stricken would die but always there would be pain and loss and the body would be left less resistant than before.

So, also this disease of tobacco poisoning nearly always impairs the body. It may often happen that like this college man, the smoker in the first years of his habit shows practically no harm, but later almost every smoker would

be found to be more or less harmed and some do die as a result.

Emphasize the fact that there is certainly a real and not very remote danger to the smoker, for in the nature of things inhaling an irritating and poisonous smoke would tend to induce throat and lung troubles. Proof of this proposition is found in the not infrequent coughs and consumption suffered by smokers, and also by the investigations at the Phipps Institute for Consumptives (p. 110) where it was found that three times as many tobacco-users as non-users died and that 21 per cent. more non-users than users improved. (Give any cases known where tobacco using has resulted in severe injury or led to fatal disease and ask the boys to give similar ones known to them.)

Isn't it as sensible to refuse to expose one's self to tobacco disease, even though it be fashionable, as to small-pox? As a matter of fact did you ever personally know of a case of small pox and how many deaths do you know of in your entire city?

OFTEN IT IS NOT A CHANCE BUT A SURE THING

REVIEW briefly the evidence of the commoner counts against *tobacco using in men*, appealing to experience and the boy's common knowledge whenever possible.

Tobacco using causes (1) inconvenience and even suffering (p. 142) and (2) vice-slavery (p. 146).

Tends to affect injuriously (1) eyesight (p. 116); (2) the tissues of the mouth and throat thus favoring cancer (p. 112); (3) the nervous system (p. 120); (4) the heart and blood vessels and thus the circulation (pp. 110, 118) and (5), the respiratory apparatus (p. 110).

Some of these results are incontestible. Do not infer that every smoker—indeed, scarcely any user will suffer all these things; state also that occasionally one may seem entirely immune, but emphasize the fact that almost every user eventually shows injurious effects.

Evidently even for grown men, some part of priceless life is made a burden or cut off entirely.

Now marshal the facts for the boys themselves, emphasizing the point that practically all men, even tobacco users, and every authority unite in insisting that growing boys and youths will certainly be injured by the use of tobacco. Development either physical or mental, perhaps both, will be retarded; school work will be less satisfactory; self-control is usually impaired. (See pp. 110, 113, 114,

124a. Mention cases observed and direct the boys to write out or think out the cases of cigaret-using boys they know and see the truth for themselves.

Isn't your life, my boy, too valuable, your liberty too sweet, your opportunity too great to barter for the doubtful pleasure, the dangerous pastime of smoking?

A Victim: One of Many

The present anti-cigaret campaign which is being undertaken in the colleges of America was inspired by a young college man, himself a victim of the cigaret habit. When on his way to California to die, he called upon Miss Gaston, told her his story and secured her promise that it should be published and the warning given.

AT NINETEEN I entered — College, a perfect athlete, and entirely free from vice. Early in my college course I began the use of cigarets, as most of the students were using them. By the time I graduated I was a confirmed cigaret smoker, but I thought I was immune as no serious injury seemed to be resulting. I entered the field of journalism and the stress and strain of the life led me to greater and greater indulgence in cigarets. These, however, did not seem to satisfy my craving entirely, and I took up drink, and drifted gradually into gambling and other vices.

I found I was breaking the heart of my mother, whom I still loved, and I gave up drink and my other vices and settled down to a better life and attended to business. I found, however, that I could not give up cigarets and smoked more and more of them.

While laughing and chatting over the events of the day with two other newspaper men, whose desks were near mine, we put in the time night after night, rolling cigarets enough to last while we wrote our stories. When I had sixty arranged in convenient shape to light one after another I began writing, and by the time my copy was ready they were gone.

I smoked much beside and, like most confirmed smokers of cigarets, was unable to sleep without cigarets on a chair by my bed.

A hundred cigarets a day were not an unusual thing for me and others with whom I was associated, whose nerves were uncontrollable when out from under the narcotic influence.

Smoking now began to tell upon my health and I became a victim of consumption from the inhalation of the poison [which injured the lungs and lowered the body's resistance to the germs]. I grew constantly worse, until now one lung is gone and the other is seriously affected. By going to California it is hoped that my life can be prolonged a few

weeks or possibly a few months, but there is no hope for my recovery. Just when I am ready to take my place in the world as a man among men, being fitted for it by education and some natural ability, with a good family and wealth back of me, I must lie down and die like a dog, and cigarets have done it. There are thousands of others as ignorant and careless as I was in those happy days who, if they only knew my experience and could be reached by an appeal and a warning of simple facts, would be saved. A little effort would easily have kept me from the fatal beginning, as my only reason for smoking was a fear of not being classed with the "good fellows."

My mother even, had never warned me of the danger, but seemed to think everything would be all right because I was her son and had been brought up in a Christian home.

—*Leaflet Anti-Cigaret League of America.*

A Grasshopper Jump

WHY are some boys like grasshoppers?" asked a good-natured teacher of a class of boys.

The boys looked at one another and thought seriously for a few moments.

No one was able to guess the riddle and the teacher told them.

"Boys are like grasshoppers because they often jump with no idea where they are going to land.

"The grasshopper may land in the road and be crushed by the wheel of a wagon or in a pile of burning brush and be burned to death.

"When a boy jumps into the cigaret habit he little thinks of landing in the opium den, the prison pen, the lunatic asylum or the grave. But the cigaret may take him to all these places."—*Gem Leaflet.*

A NEW BOOK ON INEBRIETY

In the last five years increasing attention has been given by physicians, psychologists, and sociologists to the individual and social importance of inebriety. The appearance of the new work on this subject by Dr. T. D. Crothers is therefore timely and will be welcomed by students of the subject especially by many physicians.

The work of nearly four hundred pages is comprehensive, addressed chiefly, of course, to the physician, but it gives the layman as well, an idea of the immense complexity of the problems of this disease and its medical and legal ramifications.—365 pages. \$3.00. Harvey Publishing Co., Cincinnati, Ohio.

CONTENTS OF VOLUME XX.

September, 1910—June, 1911.

CHART DIAGRAMS

Accidents, Assaults and Efficiency, Relation of Alcohol to	53
Comparative Sickness in Benefit Societies of Abstainers and Non-abstainers	64a
Comparison of 10 New Smokers and 10 Non-Smokers	113
Dangers from Alcohol not Diminished by Beer (Mueller)	37
Death-Rate, Moderate Drinking and the	146a
Death-Rate, Moderate Drinking and the (Small)	29
Employers who Prefer Non-Alcoholized Workmen	80a
Increase in Number of Liquor Dispensers (2) (Mueller)	36
Mental Work, Alcohol and (Small)	67
Memory, Effect of Alcohol on Memory	134a
Smoking as a Handicap	124a
Tuberculosis and Nervous Diseases in the Children of Drinkers	96a
Walking Match, A 62-Mile	108

CUTS

Beer or Flour, Which	94
Brain-Cells Injured by Alcohol	134
Development of Frog's Eggs Impaired by Alcohol (3)	84-5
Yeast Plants	61

LEADING ARTICLES

Alcohol as a Remedial Agent: Wiley	137
Alcoholic Delusions, The Seat and Sequel of Some: Pfaff	98
Handicap to College Students, Smoking as a: Stoddard	110
Higher State of Civilization, Abstinence as a Condition to: Foustka	125
Increased Cost of Living, Wastage of Drink as a Factor in: Mass. Com.	17
Labor Interests, Relation of the Anti-Alcohol Fight to: von Bunge	65
Parental Alcoholism, The Elderton Inquiry Into: Transeau	1
Physician's Standpoint, The: Henderson	50
Physiological Verdict (Lipoids) The: Osborne	81
Teachers' Connection with the Alcohol Question: Weiss	33

MISCELLANEOUS

Absences of Drinking Employees: Scott	68
Accidents Correspond to Drink Bill: Deutsch	76
Alcoholic, Who is an?	76
Anti-Cigaret Club, One-Million: Gaston	119
Arrested for Sickness (Drunkenness): Stoddard	104
Baseball Players Must be Sober: Mack	7
Beer not a True Food: Holltscher	131
Beer, The Truth About: Transeau	39
Blood Vessels, Tobacco Impairs: Kreuzfuchs	118
Cancer, Relation of Alcohol to	76
Cancer, Smoking and	112
Childhood's Martyrdom: Hahnel	38
Cigaret, Harmfulness of: Dennis	32
Circulatory System, Alcohol Cripples: Hay	3, 16
Cocaine Habit: Moffett	129
Comparative Sobriety of Americans: Clark	36
Cost of Living, Mass. Commission on	23
Comparison of College Smokers and Non-Smokers	113
Deaths due to Alcoholism: Mueller	111
Demonstration, Anti-Alcohol Brussels Cauwelaert	100
Drinking and Gambling, Perils of: Atkins	43
Education, Remedy for Alcoholism: Petersen	50

Emperor William's Advice to Cadets	105
Epilepsy, Alcohol and: Muller	130
Eyesight, Tobacco Impairs: Dowling	116
France, Alcoholism in	7
Germany, Cost of Alcoholism in: Lindrum	22
German Insurance Companies, Alcohol Burden on: Deutsch	76
Homemaking, Drink Causes Failures in	75
Hughes' Father Stopped Smoking, Why	120
Insanity Caused by Alcohol (Italy)	10
Insanity Caused by Alcohol and Syphilis: Folks	126
Lead Poisoning, Alcohol and	138
Life Insurance, Abstinence and:	143, 99
Liquor Advertisements, excluding: Crafts	37
Literature Distribution: Stoddard	103
Literature Work, Value of: Stewart	6
Locomotive Brotherhood's Rules: Stone	69
Longevity and Alcoholism: Stoddard	141
Manhood Handicapped in Infancy: Lee	89
Metropolitan Insurance Bulletin	118
Muscle Work made Harder by Alcohol: Pfaff	70
Nervous System, Tobacco Impairs	120
Number of Liquor Sellers and Amount of Alcohol Used: Mueller	36
Progress, March of in Europe: Hercod	83
Poverty, Drink, Cause or Consequence: Transeau	19
Public Welfare, Alcohol and	84
Puberty, Smoking and Premature: Woodhull	112
Resistance to Alcohol, Cause of: Priesig	18a
Sandow Advises Boys	13
Science, the Helper of Religion: Fisher	43
Scientific Knowledge of Alcohol, Need of: Mueller	22
Scientific Lecture Courses on Alcohol (Germany)	78
Scientific Temperance Federation: Annual Report: Stoddard	56
Self-Drugging with Narcotics	88
Sick Benefit Societies, Drain on: Mueller	139
Smoking Injures Boys, How?	114
Snake Bite, Alcohol not a Remedy	21
Social Evil, Alcohol and: Hall	10
Soda Fountains, Dangers of: Kebler	128
Sources of Enjoyment, The Working Man's: Transeau	72
Survey of the Field (Report): Transeau	51
Swedish Campaign Against the Cigaret	114
Temperance Instruction, Moral or Scientific: Stoddard	26
Temperance Education, Resolutions on (Catholic)	10
Temperance Education, Resolutions on (Canada)	83
Tobacco Using by Physicians	10
Tobacco Habit, Helps in Curing	124
Total Abstinence Not Old Fashioned: Transeau	98
Tuberculosis, Alcohol Lowers Resistance to	140
Tuberculosis and Alcoholism, Public Scourges	35
Tuberculosis, Alcoholism and: Phipps Inst.	71
Tuberculosis, Causes of: Lancereau	16
Tuberculosis, Tobacco Using Favors: Phipps Inst.	110

EDITORIALS

Achievement, Self Control for	8
Alcoholic Drinks, Pure	131
Antidote for Pessimism, One	55
Arrested for Sickness	104
By-Product of Cigaret Using	117
Civilization, The Vanguard of	24
Evolution Begins, When	55
Girls, For the Sake of the	34
Heroic Appeal, The	117

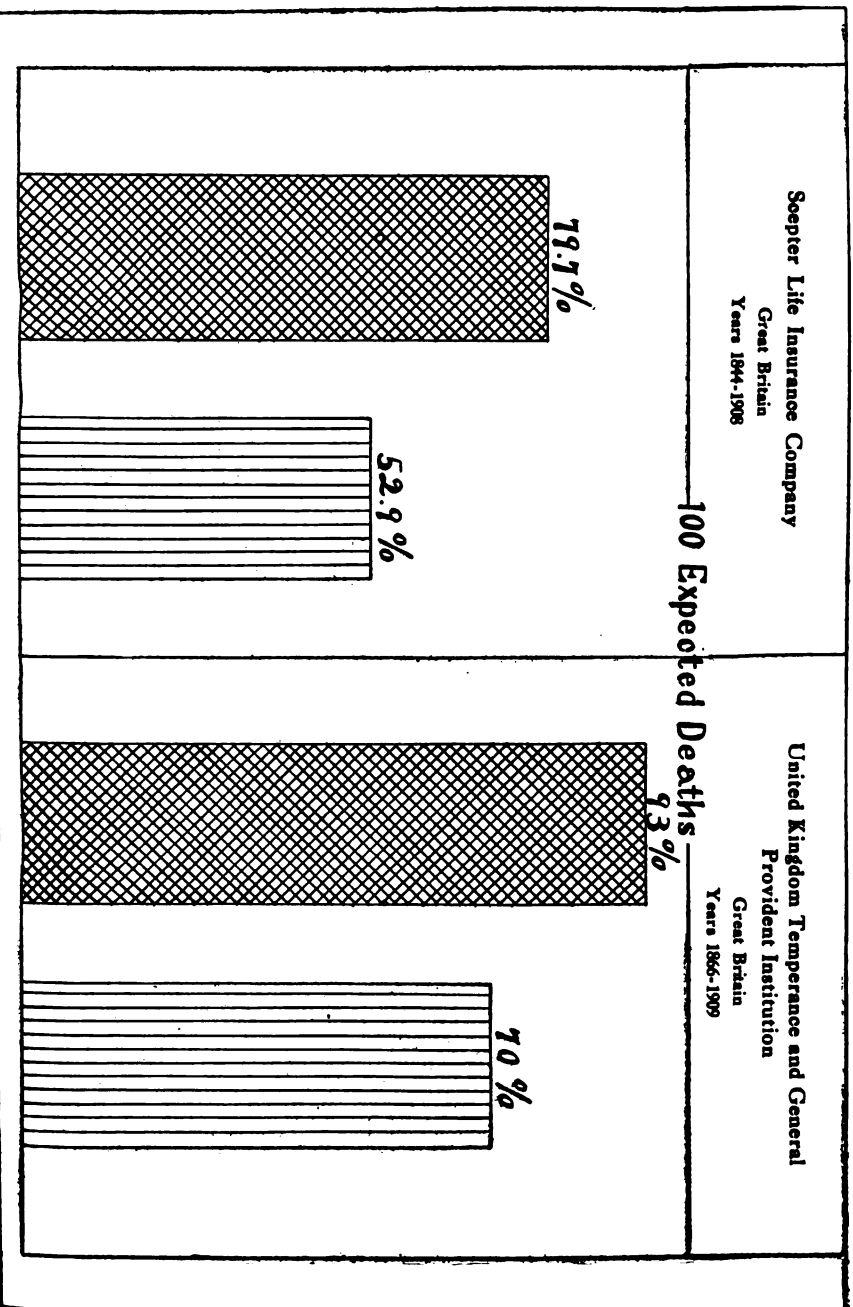
Industrial Assets and Liabilities	74	and Insurance	30, 52, 56, 59, 76, 77, 99, 118
Juvenile Crime	25	and Labor	79, 80, 100, 126, 132
Made in Germany	74	and Lead Poisoning	53, 127
No Information, No Inspiration	103	and Leprosy	53
Preventable Disease, Conquering	131	and Loss of Time	68, 80
Remedy, The Permanent	90	and Morality	80, 86, 105
Responsible Majorities	42	and Poverty	17, 19, 63, 65, 77, 78
School the True Function	42	and Resistance	5, 23, 52, 53, 98, 123
Seeking Help From Egypt	102	and Sports	7, 51, 93
System or Casualty	9	and Sunstroke	125
Use of Fermented Drinks, The Meaning of the Increased	8	and Working-men's Clubs	66, 72
Word With the Editorial Brethren	75	as a Food	54, 131
Workman, The High Priced	102	a Narcotic	64, 82
		a Poison	52, 82, 133
STORIES		Alcohol Problem	
Answering Eloise	60	In Belgium	
"Clean" Smile, Story of	44	In France	16, 35, 83
Conversion of Vanla	86	In Germany	22, 34, 35, 38, 52, 59, 70, 71, 73, 75, 83, 85, 98, 105
Coping successfully with the High Cost of Living	91	In Italy	10, 25, 83
Fox Without a Tail, The	12	In Norway	38, 83, 99, 126
How He Lost His Golden Opportunity	123	In Russia	86
The True Story of Paul	121	In Switzerland	66, 83
SUGGESTED LESSONS		Decreasing Medical Use of	21, 49, 101
HIGH SCHOOL.		Moderate Use Harmful	54, 70, 85
Blood and Circulation	14	Predisposing Causes of Intemperance	20, 25, 34, 88, 89
Physiology as a Science: Ellis	30		
Self-Drugging, Dangers of	88	Effects of Alcohol on	
ADVANCED		Blood	4, 81, 82
Abstinence and Long Life: Stoddard	29	Brain	19, 82, 97, 104, 136
Alcohol and the Laborer	77	Character	10, 23, 125
Anti-Cigaret Lesson: New York Fire	46	Children	1, 2, 19, 35, 78
Balance Sheets: Abstinence vs. Alcohol	62	Digestion	53, 54
Brain and Nerve Control: Emperor William's Advice	105	Germinal Glands and Cells	54
Business Men Demand Abstinence of Employees, Why	79	Growth and Development	96
Price a Woman Pays for Alcohol, The	123	Heart and Circulation	3, 40, 53, 64, 101
Remembering and Forgetting	134	Kidneys	52
Value of a Boy's Life	146	Lipoids	81
INTERMEDIATE		Liver	111
Anti-Cigaret Work in Sixth Grade, Methods of	27	Lungs	53, 64
Beer or Flour: Coping With High Cost of Living	91	Mental Ability	40, 51, 52, 73, 80, 93, 106, 125, 132
Caring for the Baby	94	Muscular Activity	40, 51, 70, 73, 82, 93
Fermentation: Answering Eloise	60	Nervous System	53, 54, 69, 77, 81, 89
Opportunity, How Impaired by Cigarets	123	Purity	126
Personal Hygiene: Ventilation, Cleanliness	11	Protoplasm	84, 89, 132
Spoiling the Great Investment	121	Special Senses	40, 80, 106, 135
PRIMARY		Tuberculosis	16, 35, 71
Cigaret Lesson: Fox Without Tail	12	Will Power	52, 85
Grapes and Wine	107	Working Ability	63, 68, 80
Habit Building: The Camel's Nose	48	Increases Susceptibility to Disease	5, 35, 50, 80
Sleep and Rest: Japanese Lullaby	28	Not a Stimulant	64, 82, 101
REFERENCES		Alcoholism a Disease	76, 89
Alcohol		Beer	
and Abortion	1	Does not Displace Spirits	35, 36
and Accidents	69, 76, 77, 80	Harmfulness of	40, 98
and Child and Woman Labor	79	Lowers Earning Ability	40
and Child Mortality	1, 2, 38	Not Absolutely Pure	40
and Comparative Sickness	29, 52, 53, 93	Not a true Nutrient	25, 41, 92, 131
and Cancer	76	Tobacco	
and Crime	18, 22, 25, 63, 79, 100, 104, 105	Annoyance of Habit	132
and Cost of Living	78, 86, 126	and Development	13
and Death Rate	2, 18, 29, 35, 52, 66, 70, 98, 99, 111, 112	Cigaret	32, 69
and Degeneracy	2, 7, 39, 48a, 54, 100, 123, 131	Contains a Poison	116
and Epilepsy	50, 63, 79, 130	Not uninjurious to men	10, 113
and Efficiency	23, 25, 69, 75, 78, 79, 80, 85, 101, 106, 136	Effects of Tobacco on	
and Failures in Home-Making	75, 85	Cancerous Growths	112
and Fatigue	23, 70, 82	Character	112, 113, 119
and Insanity	10, 18, 50, 59, 63, 70, 77, 78, 100, 127	Efficiency	69, 123
		Eyesight	116
		Growth	115
		Heart and Blood Vessels	10, 118
		Lung Capacity	113
		Scholarship	110, 113, 115
		Strength	113
		Tuberculosis	71, 110

Moderate Drinking and the Death Rate

Facts from the Life Insurance Companies

Diagonal lines represent actual deaths of Moderate Drinkers.

Vertical lines represent actual deaths of Abstainers.



ANTI-TOBACCO HELPS

Cigaret Stereopticon Slides } For Sale
Anti-Tobacco Charts . . . }

	each
Power of Tobacco Habit	\$.20
Why the Cigaret is Especially Harmful	.20
Use of Tobacco	.05
Boy and the Cigaret	.05
Avoiding a Dangerous Blind Lead (18 pp.)	.05
(Best all-round Anti-Cig.-No. Journal.)	
April Anti-Narcotic Journal	\$.50 a doz.

SPECIAL OFFER

SET OF SLIDES SUFFICIENT FOR ILLUSTRATED SCIENTIFIC TEMPERANCE LECTURE

8 Colored Slides
Complete with Copyrighted Ms.

Only \$20 for All

Scientific Temperance Federation, 23 Trull St., Boston

The Temperance Problem

Presented from the standpoint of

HEALTH, ECONOMICS, CIVICS

in a manner to

DISARM PREJUDICE, GRIP ATTENTION, CREATE ENTHUSIASM, ENCOURAGE ACTION

SPECIALLY DESIRABLE FOR

Labor Unions, Lyceums and Chautauquas, Societies of Christian Endeavor, Parental or Industrial Schools, No-License Campaigns, Public Temperance Meetings held in Churches or by Temperance Organizations, Social Welfare Workers and for High and Normal Schools and for Teachers' Meetings.

Trained Lecturers Available Lectures Illustrated if Desired

Send for full Particulars and Terms

Scientific Temperance Federation, 23 Trull St., Boston

REMARKABLE SPECIAL OFFERS

We have made arrangements with three publishers to make the following special offer for the next thirty days.

PICTORIAL REVIEW,	-	-	1 year, 12 issues, @ 15c. = \$1.80
MODERN PRISCILLA,	-	-	" " @ 10c. = 1.20
LADIES' WORLD,	-	-	" " @ 5c. = .60
SCIENTIFIC TEMPERANCE JOURNAL,	"	"	.60

Regular Price, \$4.20

Special Thirty-Day Price for All Four, - \$1.50

PICTORIAL REVIEW The fashion pages of this magazine have won for it a circulation of over 600,000 copies monthly. Its styles and patterns are famous the world over. Ask your dressmaker. She knows. The special articles, fiction stories and household departments are timely and instructive reading for every woman who does her own thinking for herself. PICTORIAL REVIEW is a necessity in the economical management of the home and the wardrobe. You will get this magazine each month for one year.

MODERN PRISCILLA is recognized as the leading fancy-work magazine of America. It is to-day the undisputed authority on all kinds of embroidery, crochet, lace, lingerie and home decoration. There are several departments devoted to china, oil and water color painting, stenciling, pyrography leather work, basketry, etc. You will get this magazine each month for one year.

LADIES' WORLD is a thoroughly practical and up-to-date household magazine, and treats of every subject of interest to women and the home. Its household departments are as good as a course in Domestic Science. Its stories, verses and entertainments for children always please and interest. You will get this magazine each month for a year.

ALCOHOL AND THE HUMAN BODY

By Horsley and Sturge. Recognized as the most complete, reliable, interesting and valuable book on Alcohol and Human life, health, efficiency, morality, and heredity, yet published. 370 pages; 16 beautiful plates; 21 diagrams.

SCIENTIFIC TEMPERANCE JOURNAL

Packed full every month of readable, up-to-date, carefully stated facts about alcoholic drinks and narcotics gathered from scientists and scientific papers all over the world. Specially helpful to teachers and church, S. S. and social workers.

Send for other special club rates of the JOURNAL with magazines and helpful books.

Send Your Order at Once—NOW
Before You Forget It—to

SCIENTIFIC TEMPERANCE JOURNAL, Boston, Mass.

BOTH for

a

DOLLAR BILL

APR 27 1912

2B
495

4#
4#



3 2044 102 965 258

Good